CURRICULUM SCHEME & SYLLABUS OF 2015-2020 BATCH

I Semester - II Semester

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

B. Arch. Semester I (2015-20)

No	Code	Course	Category	L-S-P	Credit	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATC101	Architectural Design – I	Design	2-3-0	5	6	70	30	100	NA
2	15AATC102	Building Const & Materials – I	Construction	1-3-0	4	6	70	30	100	NA
3	15AATC103	Graphics – I	Communication	1-3-0	4	6	70	30	100	NA
4	15AATC104	Visual Art & Basic Design	Design	2-1-0	3	4	70	30	100	NA
5	15AATC105	Architecture & Culture	Design	0-1-0	1	2	70	30	100	NA
6	15AATC106	Skill Development Workshop I	Design	2-0-0	2	2	70	30	100	NA
7	15AATC107	Structures – I	Construction	3-0-0	3	3	50	50	100	3 HOURS
8	15AATH101	Constitution law	Profession	0-0-0	Audit	1	50	50	100	3 HOURS
TOTAL				11-11-0	22	30	520	280	800	

ISA :Internal Semester Assessment , ESA : End Semester Assessment , P : Practical, S : Studio , L : Lecture,

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Program Head

Signature of Dean (Academic Affairs)

B. Arch. Semester II (2015-20)

No	Code	Course	Category	L-S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATC108	Architectural Design – II	Design	1-4-0	5	7	70	30	100	NA
2	15AATC109	Building Const & Materials – II	Construction	1-3-0	4	6	70	30	100	NA
3	15AATC110	Graphics – II	Communication	0-3-0	3	5	70	30	100	NA
4	15AATC111	Measure Drawing	Design	0-2-0	2	4	70	30	100	NA
5	15AATC112	History of Architecture I	Design	2-0-0	2	2	70	30	100	NA
6	15AATC113	Skill Development Workshop II	Design	0-1-0	1	2	70	30	100	NA
7	15AATC114	Structures – II	Construction	3-0-0	3	3	50	50	100	3 HOURS
8	15AATP101	Surveying	Construction	2-0-0	2	2	50	50	100	3 HOURS
TOTAL				9-13-0	22	31	520	280	800	

ISA :Internal Semester Assessment , ESA : End Semester Assessment , P : Practical, S : Studio , L : Lecture,

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Program Head

Signature of Dean (Academic Affairs)

I SEMESTER

Program : Architecture		
Course Title: ARCHITECTURAL DESIGN - I		**Course Code: 15AATC101**
L-S-P: 2-3-0	**Credits: 5**	**Contact Hours: 6**
ISA : 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 96	**Examination Duration: NA**	

UNIT I: Introduction to Human proportions, Anthropometry and space standards

Detailed study of spaces requirements with respect to single unit dwellings such as living, dining, bedrooms, kitchen, toilet etc. minimum standards for movements and vehicular data expression of design using the following.

- Spatial perception of spaces
- Study of anthropometrics
- Circulation
- Forms and integrity
- Space planning
- Architectural expression

UNIT II: Introduction to Space making elements.

Defining the core space making elements like wall, openings, column, floors, roofs, stairs etc. its usage and importance in designing spaces of various needs. Measuring and plotting existing buildings to understand element and its role in space creation.

UNIT III: Designing a multi room space.

Designing and organizing spaces of various purposes with respect to movement, circulation, furniture layout, aesthetical relation of traditions, culture etc. expression of creativity in form making
The design issues to be addressed are

- Various basic human functions and their spatial implications
- Formulation of concepts
- Anthropometry and furniture layout
- Movement and circulation diagram
- Interior volumes and space articulation through different materials.
- Integration of form and function.
- Study models.

The design projects could be, my dream house, guest house, farm house, tree house, cottage, etc.

Text Books:NIL

Reference Books: Ching, Francis DK, Architecture: Form, Space and Order, 2nd ed.Van Nostrand Reinhold, New York, 1999

Scheme for End Semester Examination (ESA)
Evaluation of Portfolio, assignments by internal and external examiners / Viva.

Program : Architecture

Course Title: BUILDING CONSTRUCTION & MATERIALS - I		Course Code: 15AATC102
L-S-P: 1-3-0	Credits: 4	Contact Hours: 6
ISA: 70	ESA Marks: 30	Total Marks: 100
Teaching Hours: 96	Examination Duration: NA	

UNIT I:

Introduction to various building components and their function, various conventions used for drawing in plan, section and elevations for different construction materials. Introduction to various tools commonly used for excavation, masonry and carpentry work.

Brick Construction – Types of brick masonry walls including bonds, pilasters, lintels and arches.

UNIT II:

Stone construction – Types of walls including bonds, lintels and arches.

Foundation – Types and behavior of soils. Functions and types of foundations, foundations for load bearing structure in brick and stone. Plinth formation, coping and damp proof course (DPC).

UNIT III:

Bricks and Clay products – Types, properties, uses and manufacturing process in brief.

Stones – Types, properties and uses, methods of quarrying in brief

Lime – Varieties, properties and uses in construction

Cement – Types, properties, uses, field tests.

Sand – Availability, properties

Aggregate – Sources and types

Mortar – Preparation and application

Blocks – Hollow and solid blocks in concrete, adobe (stabilized mud) blocks.

Reference Books:

- McKay J.K Building Construction Metric Vol 1-4, 4th edi 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, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000
- "Building Construction" by Janardhan Jha, Khanna New-Delhi.
- Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
- "Building Materials" by S K Duggal, IBH New Delhi.
- Sushil Kumar T.B of Building Construction 19th edi, Standard Pub House, NewDelhi, 2003.

Text Books:NIL

Scheme for End Semester Assessment (ESA)

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

Program : Architecture		
Course Title: GRAPHICS - I		**Course Code: 15AATC103**
L-S-P: 1-3-0	**Credits: 4**	**Contact Hours: 6**
ISA: 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 96	**Examination Duration: NA**	

UNIT I:

1: Introduction to the basic principles of drawing

Introduction to the basic principles of drawing, introduction to drawing equipments and their uses, sign conventions, Lettering and Dimensioning, Architectural Scale

2: Plane geometry – Lines, Angles, Curves and regular Polygons

Construction of triangles, quadrilaterals, curves and regular polygons

3: Solid Geometry – Points and Lines

Introduction to solid geometry, Orthographic projections of points and lines

4: Solid Geometry – Planes and Solids

Problems on Orthographic projections of planes and solids

UNIT II:

5: Three Dimensional Representation – Oblique, Axonometric & Isometric

Problems on Oblique, axonometric & Isometric projection of solids

6: Technical drawing

Simple floor plans, elevation, sections, of simple building.

UNIT III:

7: Architectural Detailing

Reading and representing building components details such as door frames fixing,chejja, plinth formation,steel joinery etc.

Text Books:

I. Bhat N.D. and Panchal V.M, Engineering Drawing, Plane and solid geometry, Charotar Publishing house, Anand 2002.

II. Francis D.K. Ching, Architectural Graphics, 4th Edition, John Wiley & Son, New York

References:

III. I H Morris, Geometrical Drawing for Art students.

IV. K R Gopalkrishna, Engineering Drawing Vol I & II combined edition, Bangalore, 2001,

V. K. Venugopal, "Engineering Drawing and Graphics" New Age

i. International (P) Ltd, New Delhi 2001.

VI. Francis D.K. Ching, Design Drawing, 4th Edition, John Wiley & Son, New York

Scheme for End Semester Assessment (ESA)

Evaluation of Portfolio of Term Work and tests.

Program : Architecture		
Course Title: Visual Art & Basic Design		**Course Code: 15AATC104**
L-S-P: 2-1-0	**Credits: 3**	**Contact Hours: 4**
ISA: 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 64	**Examination Duration: NA**	

ISA :Internal Semester Assessment, ESA : End Semester Assessment

UNIT I:

1. **FREE HAND AND OBJECTS DRAWING**: Observation and recording through free hand drawing by using various drawing and sketching tools like pencil, pen, charcoal crayons etc.
2. **ARCHITECTURAL SKETCHING**: Drawing of human figures, vehicles, small buildings, furniture, simple and complex geometrical objects with an emphasis on the perception of details and expressing them in lines, colour texture etc.
3. **PAINTING** : Understanding of colour wheel, components , types of colour, colour schemes, value and intensity by using painting tools and materials like brushes, paper, water color, poster colour etc.

UNIT II:

4. **Elements of Visual Composition:** Understanding role of the following basic elements of visual design existing in paintings, compositions, murals, sculptures, building and in a nature – Dots, Lines, Planes, Patterns, Shapes, Forms, Spaces, Colour, Texture, Levels, Light, Fenestration's. Study of Textures and Textures Schemes.
5. **Principles of Visual Compositions :** Understanding and using principles like Repetition, Rhythm, Radiation, Focal point, Symmetry, Asymmetry, Background, Foreground, Sense of Direction, Harmony, Balance and Proportion.

UNIT III:

6. **SCULPTURE**: Creating and carving sculpture, understanding the different media used for sculpture like plaster of paris, clay, wire, wax etc.
7. **EXPLORATION OF ART FORMS**- study of traditional and contemporary art forms, relation between art and architecture from earliest times to present.

Reference Books:

Robert Gill : Rendering with pen & ink , Thames & Hudson New York 1984

Robert Gill : Basic Rendering ,Thames & Hudson New York 1991

John Chen : Architecture in pen & ink, McGraw-Hill Inc- USA 1995

Colin Saxton : Art School, Chartwell Books Inc New Jersy.

Scheme for End Semester Assessment (ESA)

Evaluation of Portfolio, assignments by internal and external examiners

Program : Architecture		
Course Title: Architecture and Culture		**Course Code: 15AATC105**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA: 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

- Introduction to Culture- Relevance & influence of Culture on Architecture.

CULTURAL INFLUENCES IN ANCIENT INDIA

Indus valley civilization Town -planning in Mohenjo-Daro –Tree & mother goddess worship . Harappa and lothal –the great bath, the great granary – sumps, manholes, underground drainage etc

Symbolism in early Buddhist architecture in India – Stupas at Sanchi and Amaravati

Symbolism in Tibetan Buddhism manifestation in the architecture of monasteries (gompa) and palaces – Potala palace, Palpung monastery

UNIT II:

- TRADITIONAL ART &ARCHITECTURE OF WEST COAST OF INDIA

Salient features of the house –
Elevation -
Roof wood frame details
Contemporary expressions

UNIT III:

- TRADITIONAL ART &ARCHITECTURE OF KARNATAKA

Salient features of the house –
Elevation -
Roof wood frame details

- Contemporary expressions

Reference Books:

1. A.Thampuran “Study of Architecture Forms in Malabar coast” Wiley and sons Inc
2. George Mitchell - Temple towns of Tamilnadu- Marg publications Bombay 1993 .
3.Raj Rewal, etal – Architecture in India – Ministere des relations exteriieres , frances

Scheme for End Semester Assessment (ESA)

The evaluation of portfolio worked during the course by internal and external examiners.

Program : Architecture		
Course Title: SKILL DEVELOPMENT WORKSHOP – I		**Course Code: 15AATC106**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**
ISA: 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

Allied skills for Architecture

Introduction to Basics of the following associated skills to enhance and understand spatial, scale, material, and aesthetical requirements of design, construction and presentation.

- Model making
- Wood working
- Murals and sculpting (Using Metal, Wood, Clay & POP)

UNIT II:

Tools and materials

Hands-on working of advance model making and working tools. Various types of materials used for making scaled models, sculpting etc. (Paper, card sheet, mount board Art card, foam, metal, plaster, clay, wax glass etc.)
Methods of cutting, joining, texture development, glue welding and joinery

UNIT III:

Reusing and Recycling

Designing, remoulding and producing useful products from waste materials. Various Methods of working and handling trash. Adding aesthetical, artistic and product value to used and waste materials or byproducts.

Text Books: NIL

Reference Books: NIL

Scheme for End Semester Assessment (ESA)

Checking of Models and products by external and internal exam

Program : Architecture		
Course Title: Structure-I		Course Code: 15AATC107
L-S-P: 3-0-0	Credits: 3	Contact Hours: 3
ISA: 50	ESA: 50	Total Marks: 100
Teaching Hours: 48	Examination Duration: 3 HOURS	

1. **UNIT I: Evolution of Structures:** Historical perspective and definition of structure as a device for channeling loads that result from the use or presence of the building in relation to ground.

2. **Structural systems and its elements overview:** Vertical/lateral systems: wall, cantilever, moment frame, braced frame, horizontal one-way and two-way systems: truss, arch, vault, dome, shell, cable stayed, suspended, membrane.

3. **Experiment with Structures:** Example-1: Build a structure using drawing sheet paper having three and four supports to carry a weight of 2 to 3 kg on it. Example-2: Make a column of height 30mm to carry a weight of 3kg. Example-3: Build a beam of span 450mm simply supported to carry a weight of 1kg at mid span.
4. **Basic structural Materials:** Qualities of building materials Mechanical properties of Structural materials: wood, masonry, steel, concrete, fabric; energy use and rupture length. Advantages and disadvantages of Structural Materials and choice of Structural Material for domestic buildings, Industrial buildings, Tall buildings and Long Span buildings.
5. **Loads on Structures:** Dead load (DL), live load (LL), static, dynamic, impact, and thermal loads. Principle of transmissibility of forces. Understanding load flow by tributary load and load path (slab, beam, and girder) and vertical members (post, wall, and footing); load path.

6. **Sectional properties:** Centroid, difference between centroid and centre of gravity, role of symmetry in locating centroid, moment of inertia, obtaining moment of inertia of unsymmetrical by applying parallel and perpendicular axis theorems.

UNIT II

7. **Equilibrium of Forces:** Force, characteristics of a force, Reaction, Moment of a force and Principle of Support conditions and their significance in resistance to forces and to maintain equilibrium.

8. **Basic principles of mechanics:** Tension, compression, shear, bending, torsion; symbols and notations; force and stress.

9. **Stress/strain relations (Hooke's Law):** Material response to applied loads, intensity of stress, strain and types. Stress strain diagrams for major building materials, Modulus of Elasticity, linear and non-linear materials, elastic, plastic, and elastic-plastic materials; Poisson's Ratio; Thermal stress and strain.

10. **Graphic vector analysis:** Resultant and equilibrant of coplanar, concurrent and non-concurrent force systems. Parallelogram, force polygon, resultant, equilibrant, components; numeric method.

UNIT III

11. **Truss**: Truss concept of triangulation, common truss configurations, innovative forms for truss of given span.
12. **Truss loads and reactions**: For a given configuration of the trusses and center to center spacing, calculations of the dead weight of the truss and the dead weight of the roof cover and support reaction loads analysis of simple trusses by method of joints..

Text Books:Engg Mechanics by S.S.Bhavikatti III-edition .Vikas publications New Delhi.

Reference Books:

***REFERENCES*:**

1) STRUCTURES - Martin Bechthold, Daniel L Schodek, and PHI Learning Private limited, Sixth Edition 2) Structure in Architecture, the building of buildings, by Mario Salvadori 3) Structure and Design, by G. G. Schierle 4) Engg Mechanics – R K Bansal & Sanjay Bansal, Laxmi publications, New Delhi, 3rd ed 5) Engg Mechanics, Ferdinand L Singer, Harper Collins publications, 3rd ed.

Scheme for Semester End Examination (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	1,2,3,4,5	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	6,7,8,9	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	10,11	Solve Any **1** out of **2**

Program : Architecture		
Course Title: CONSTITUTIONAL LAW		**Course Code: 15AATH101**
L-S-P: 1-0-0	**Credits: 0**	**Contact Hours: 1**
ISA: 50	**ESA: 50**	**Total Marks: 100**
Teaching Hours: 16	**Examination Duration: 3 HOURS**	

UNIT I:

- Preamble to the Constitution of India
- Evolution of Constitutional Law.
- Scope and extent of fundamental rights under part-III
- Details of exercises of rights,
- Limitations and important cases
- Relevance of Directive principals of State Policy under part IV.
- Significance of Fundamental duties under part IV (a)

UNIT II:

- Union Executive-President, Vice President, Prime Minister, Council of Ministers, Parliament and Supreme Court of India
- State Executive-Governor, Chief Minister, Council of Ministers, Legislature and High Courts.
- Functions of Panchayats, Muncipalities and Corporations.
- Constitutional Provisions for scheduled castes and tribes, women and children and backward classes.

UNIT III:

- Emergency provisions.
- 42nd, 44th, 86th Constitutional amendments and Amendment procedure under Article 368.
- Electoral Process

Text Books:

1. "Introduction to the Constitution of India" by Durga Das Basu 2004

Reference Books:

1. "An Introduction to Constitution of India" by Pylee
2. "Constitution of India" -- by VN Shukla

Scheme for Semester End Examination (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	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	2	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	3	Solve Any **1** out of **2**

II SEMESTER

Program : Architecture		
Course Title: ARCHITECTURAL DESIGN – II		Course Code: 15AATC108
L-S-P: 1-4-0	Credits: 5	Contact Hours: 7
ISA: 70	ESA: 30	Total Marks: 100
Teaching Hours: 112	Examination Duration: NA	

UNIT I:

1. **Introduction to Design theory**

- Principles of architectural composition:
- General principles like unity, Balance, Proportion, Scale, Contrast, Harmony, Accentuation, and Restraint. Repose, Vitality, Strength in the built environment
- Underlying Ordering Principles Symmetry, hierarchy, datum, axis, scale and proportion rhythm in the built environment.

UNIT II

1. **Introduction Multiuser/ public spaces**

Defining and understanding various design aspects needed for multi /semipublic/public user spaces.

UNIT III:

Designing a multi user multi level room space.

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

The design issues to be addressed are

- Multi user and multi level space formation
- Integration of material and form.
- Integrate the horizontal and vertical circulation.
- Develop skills to correlate the materials and the resulting form.
- Details pertaining to the disabled, aged people and children.

The tentative list of suggested projects to be covered as design problems: Architectural Exhibition / display spaces Multi level museum, academic spaces, kindergarten school, Recreational spaces fast food/ restaurant

Text Books:NIL

Reference Books:

1. Bernard Rudofsky, *Architecture without Architects* .a short introduction to Non-Pedigreed Architecture. Academy Edition London
2. *Francis D K Ching,* Form Space and Order
3. *J.M.Zunde* ,Design Procedures – level 4
4. *Mike Dartion,* The illustrated Book of Architect & Architecture

Scheme for End Semester Assessment (ESA) Evaluation of Portfolio, assignments by internal and external examiners/viva

Program : Architecture		
Course Title: BUILDING CONSTRUCTION & MATERIALS - II		**Course Code: 15AATC109**
L-S-P: 1-3-0	**Credits: 4**	**Contact Hours: 6**
ISA: 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 96	**Examination Duration: NA**	

UNIT I:

Construction: Introduction to Doors**:**

Study of various types of timber doors viz, Ledged & Battened, Ledged, Battened & Braced door, Framed & Paneled door, partly glazed & Partly Paneled door, Flush doors

Materials : Timber, Commercial wood

UNIT II:

Introduction to Windows:

Study of various types of glazed timber windows viz, Casement window, Corner window, Bay window

Introduction to Roofs:

Study of conventional timber roofs for moderate spans: Flat roof, Lean to roof, Couple roof, Collar beam roof, King and Queen Posts.

UNIT III:

Introduction and study of:

Bamboo, Cane, Thatch, Roofing materials, paints for interior and exterior.

Reference Books:

I. McKay J.K Building Construction Metric Vol 1-4, 4th edi Orient Longman Pvt. Ltd, Mumbai,2002
II. "Construction Technology" volume-I by R Chudley, ELBS & Longman group Ltd.
III. Barry R, "The construction of buildings" , Vol-2, 5th Edi, East West Press, New Delhi 1999.
IV. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000
V. Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004

- "Building Materials" by S K Duggal, IBH New Delhi.
- Sushil Kumar T.B of Building Construction 19th edi, Standard Pub House, NewDelhi, 2003.

Text Books: NIL

Scheme for End Semester Assessment (ESA)

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

Program : Architecture		
Course Title: GRAPHICS - II		**Course Code: 15AATC110**
L-S-P: 0-3-0	**Credits: 3**	**Contact Hours: 5**
ISA: 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 80	**Examination Duration: NA**	

UNIT I:

1. Section of Solids - section of simple and composite objects.
2. Perspective View- Parallel and Angular perspective projection
   - Principles and visual effects of three dimensional objects
   - Study of picture plane, station point, vanishing point, eye level, ground level etc., their variation and their resultant effects.

UNIT II:

1. Perspective view drawings of simple geometrical forms by office method and by measuring point method.
2. Sciography - Introduction of basic principles of sciography and its application to the field of architecture. Sciography of line and plane in plan and elevation.
3. Sciography of three dimensional objects in perspective views.

UNIT III:

1. Perspective drawing including (one point & two point) of building exteriors including rendering.
2. Perspective drawing including (one point & two point) of building interiors including rendering.

Text Books: NIL

Reference Books:

I. Perspective Drawing, Shah Patki Kale
II. Geometrical Drawing for Art students, I H Morris,
III. Engineering Drawing, Prof, VeeEss, MSRIT, V.K.Publishers, BNG-10,1990
IV. Basic Perspective" by Robert Gill, Rendering with Pen & Ink by Robert Gill.
V. "Perspective and Sciography" by S.H.Mullik.
VI. Perspective for Interior Desingners by John Pile.
VII. Applied perspective by John Holmes.
VIII. Building Drawing by M.G.Shah, C.M.Kale & S.Y.Patki

Scheme for End Semester Assessment (ESA) Evaluation of Portfolio of Term Work and tests.

Program : Architecture		
Course Title: MEASURE DRAWING		**Course Code: 15AATC111**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 4**
ISA: 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 64	**Examination Duration: NA**	

The students can study any 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.

Note – Two minor assignments covering the above topics in the form of drawings, reports, reviews at important stages, shall be for CIE.

A final submission covering all topics shall be for SEE along with a final portfolio of the drawings and report of the building /study area.

Text Books:

NIL

Reference Books:

NIL

Scheme for End Semester Assessment (ESA)

Evaluation of Portfolio, assignments by internal and external examiners.

Program : Architecture		
Course Title: HISTORY OF ARCHITECTURE - I		**Course Code: 15AATC112**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**
ISA: 50	**ESA: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration:3 HOURS**	

UNIT I:

Pre-classical – Persian, Mycenean, Etruscan

The Palace of Persepolis, The Palace Tiryns , The Temple of Juno Sospita, Lanuvium.

Greek Architecture

Orders of Greek, The Acropolis: Athens, Parthenon, Theatres and Temples

UNIT II:

Roman Architecture

Colosseum, Pantheon, Forums, Temples, Theatres and Amphitheaters, Aqueducts

Early Christian Architecture & Byzantine Architecture

Basilica church , Evolution of Churches, Hagia Sophia

UNIT III: Romanesque Architecture

New Construction Methods, Pisa Cathedral, The Abbey Church, Cluny Gothic Architecture

Cathedrals, Gothic Churches with construction of pointed arch, Rose windows, etc

Text Books: NIL

Reference Books:

I. Sir Banister Fletcher - History of Architecture

II. Henri Stierlin - Architecture of the World – Greece

III. Henri Stierlin - Architecture of the World – The Roman Empire

IV. Henri Stierlin - Architecture of the World – Romanesque

Scheme for End Semester Examination (ESA)

Evaluation of Portfolio, assignments by internal and external examiners.

Program : Architecture		
Course Title: SKILL DEVELOPMENT WORKSHOP - II		**Course Code: 15AATC113**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA: 70	**ESA: 30**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I: Interior Detailed Model Making

Introduction to materials and scaled textures development to be used in interior detailed modeling. Using some of the following materials :

- Paper, Card Board & Paper mash
- Soap
- Wax
- Wood
- POP
- Acrylic Sheet / Foam Sheet

UNIT II: Graphic Design

Introduction to Theory of Graphic Design & Composition Design
Understanding of Different print medias, fonts & paper types.

UNIT III:

Tapestry Design:

Hands on workshop to produce tapestry products using the following materials

- Glass
- Wood
- Clay
- Metal
- Sand

Text Books: NIL

Reference Books: NIL

Scheme for Semester End Examination (ESA)

Evaluation of Models and products by external and internal examiners.

Program : Architecture		
Course Title: STRUCTURES - II		**Course Code: 15AATC114**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**
ISA: 50	**ESA: 50**	**Total Marks: 100**
Teaching Hours: 48	**ExaminationDuration:3 HOURS**	

Unit I

1. **Determinate and indeterminate structures:** Difference between determinate and indeterminate structures, implication of indeterminacy, obtaining the redundancy of beams and frames.
2. **Bending moment and shear force:** Concept of shear force and bending moment, types of beams, concept of concentrated load, uniformly distributed load, uniformly varying load and couple. Construction of SFD and BMD for simple cases of cantilever and simply supported beams. Bending moment and shear force diagrams for two and three span continuous beams.
3. **Stresses in beams:** Concept of pure or simple bending, bending equation, section modulus and moment of resistance, obtaining bending stress distribution for simple cases of beams. Shear stress distribution across the symmetrical and unsymmetrical beam cross sections.

Unit II

4. **Deflection of beams:** Relation between deflection, bending moment, shear force and rate of loading, deflection equation, obtaining slope and deflections for cantilever and simply supported beams using standard formulae.
5. **Torsion in structures:** Concept of torsion, torsion equation, elements subjected to torsion in structural system.
6. **Columns and struts:** short and long columns, buckling of column, boundary conditions for columns, effective length, slenderness ratio and critical load. Euler's and Rankine's theories.

Unit III

1. **Design of compression members**: Design of steel posts using IS:800-1984, Design of short RC column by using IS: 456-2000 and SP-16. Design of RC columns experiencing axial load and uniaxial bending, using SP – 16.

REFERENCES:

1) STRUCTURES - Martin Bechthold, Daniel L Schodek, and PHI Learning Private limited, Sixth Edition 2) Structure in Architecture, the building of buildings, by Mario Salvadori 3) Structure and Design, by G. G. Schierle 4) Engg Mechanics – R K Bansal & Sanjay Bansal, Laxmi publications, New Delhi, 3rd ed

Scheme for Semester End Examination (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	1,2,3,4,5	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	6,7,8,9	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	10,11	Solve Any **1** out of **2**

Program : Architecture		
Course Title: SURVEYING		**Course Code: 15AATP101**
L-S-P: 2-0-0	**Credits: 02**	**Contact Hours: 02**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: 3 HOURS**	

UNIT I:

1. Surveying- definition, scope of surveying, applications of surveying in architecture projects, principles, classification and character of work. Shrunken scale. Direct and reciprocal ranging, offsets types. Basic problems in chaining, well-conditioned triangle and chain triangulation. Errors in chain surveying.

2. Principles of plane table surveying, accessories and methods of plain tabling. Merits and demerits of plane table survey as compared to chain survey.

UNIT II:

3. Levelling, terms used, instruments, classification of leveling, Temporary adjustments of dumpy level. Plane of collimation and rise and fall methods. Booking and reduction of levels related numerical on the topics. and errors in levelling. .

4.Introduction to contouring, definitions contour interval, factors affecting contour interval. Characteristics of contours, location of contours, direct and indirect methods of contouring, interpolation of contours. Application of contour maps in architecture field.

UNIT III:

5.Introduction to Theodolite temporary adjustments and field work.

6. Introduction to Geographical Information systems and Total station.

Text Books:

- B.C. Punmia, Surveying and Levelling, Vol-IChirator Publications.
- Kanetkar T. P. and Kulkarni S.V, Surveying and Levelling Part-

Reference Books:

- Duggal, Surveying and Levelling. Vol-I

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	1,2,3,4,5	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	6,7,8,9	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	10,11	Solve Any **1** out of **2**

B. Arch. CURRICULUM SCHEME & STRUCTURE OF 2015-2020 BATCH

III Semester - IV Semester

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

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

B. Arch. Semester III 2015-20

No	Code	Course	Category	L-S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATC201	Architectural Design III	Design	1-8-0	6	9	50	50	100	NA
2	15AATC202	Building Const & Materials III	Construction	1-5-0	4	6	50	50	100	NA
3	15AATC203	Services – I (w s & sanitation)	Construction	1-2-0	2	3	50	50	100	2 HOURS
4	15AATC204	Climatology	Design	1-2-0	2	3	50	50	100	NA
5	15AATC205	History of Architecture II	Design	2-0-0	2	2	50	50	100	3 HOURS
6	15AATC206	Structures – III	Construction	3-0-0	3	3	50	50	100	3 HOURS
7	15AATP201	Digital Tool-I	Communication	0-0-2	1	2	50	50	100	NA
8	 15AATE201 15AATE202 15AATE203 15AATE204 15AATE205	Elective I Vernacular Architecture Photography. Space, culture & architecture Digital rendering Space Making	Design	2-0-0	2	2	50	50	100	NA
TOTAL				11-17-2	22	30	400	400	800	

ISA: Continuous Internal Evaluation ESA: Semester End Examination L: Lecture S: Studio P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Program Head

Signature of Dean (Academic Affairs)

B. Arch. Semester IV 2015-20

No	Code	Course	Category	L-S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATC208	Architectural Design IV	Design	1-8-0	6	9	50	50	100	NA
2	15AATC209	Building Const & Materials IV	Construction	1-5-0	4	6	50	50	100	NA
3	15AATC210	Services II (Electricity & Illumination)	Construction	1-2-0	2	3	50	50	100	2 HOURS
4	15AATC211	History of Architecture III	Design	2-0-0	2	2	50	50	100	3 HOURS
5	15AATC212	Theory of Architecture	Design	1-2-0	2	3	50	50	100	3 HOURS
6	15AATC213	Landscape Design	Design	1-2-0	2	3	50	50	100	NA
7	15AATP202	Digital Tool- II	Communication	0-0-2	1	2	50	50	100	NA
8	15AATC214	Structures – IV	Construction	3-0-0	3	3	50	50	100	3 HOURS
TOTAL				10-19- 2	22	31	400	400	800	

III SEMESTER

Program : Architecture		
Course Title: DESIGN STUDIO – III		**Course Code: 15AATC201**
L-S-P: 0-8-0	**Credits: 6**	**Contact Hours: 9**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 144	**Examination Duration: NA**	

Course contents:

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

The design issues to be addressed are

- Multi user and multi level space formation
- Integration of material and form.
- Integrate the horizontal and vertical circulation.
- Develop skills to correlate the materials and the resulting form.
- 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.

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.

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, Kerier, Roab
8. Building construction and materials, Rangawala.
9. Building construction, Choudley.

Scheme for Semester End Examination (ESA)

Checking of Portfolio of Term Work / Viva.

Program : Architecture		
Course Title: BUILDING CONSTRUCTION&MATERIALS- III		Course Code: 15AATC202
L-S-P: 0-6-0	Credits: 4	Contact Hours: 6
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 96	Examination Duration: NA	

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.

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: 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

ADMIXTURES - Admixtures used in concrete to improve quality i.e. i) retarder ii) accelerator iii) plasticizer iv) water proofer v) hardener vi) pigments, etc.

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

STAIRS - Introduction to, types & calculation of stairs. Study of stairs in i) stone ii) brick iii) timber iv) steel v) RCC. Construction details for timber, fabricated steel & RCC, including fixing of handrail in various materials

UNIT III: RCC JOINTS IN BUILDING

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

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:NIL

Reference Books:

- McKay J.K Building Construction Metric Vol 1-4, 4th edi 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, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000
- "Building Construction" by Janardhan Jha, 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 19th edi, 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 – I (WATER SUPPLY & SANITATION)		**Course Code: 15AATC203**
L-S-P: 1-2-0	**Credits: 2**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: 32HOURS**	

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 incl. 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.

Text Books:

NIL

Reference Books:

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

Kshirsagar,S.R. Water Supply Engineering, 6th ed. Roorkee Pub, Roorkee, 1980.

Rangawala, S.C. Water Supply and Sanitary Engineering ; Environmental Engineering, 19th ed. Charotar Pub. House, Anand, 2004.

S.C. Rangawala, fundamentals of water supply and sanitary engineering. Charotar Pub. House, Anand,

Ilussain S. K. water supply and sanitary engineering, Dhanapat Rai and Sons, Delhi Relevant I.S. Codes

Basic Plumbing techniques, Orthobooks, Chevron Chemical Company, Consumer products Div., Box 5047, San Ramon, CA 94583

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

Manual of water Supply and Treatment , 2nd edition , CPHEEO, Ministry of works And HOUSING New DELHI , 1980
Manual ON sewage Treatment , CPHEEO, Ministry of works And HOUSING New DELHI , 1977

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions

Program : Architecture		
Course Title: CLIMATOLOGY		Course Code: 15AATC204
L-S-P: 1-2-0	Credits: 2	Contact Hours: 3
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 48	Examination Duration: NA	

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

UNIT III:

Construction Techniques for Improving Thermal Performance of Walls and roofs at various climatic Zones in India

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

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

Reference Books:

NIL

Scheme for Semester End Examination (ESA)

NOTE: ALTHOUGH THE MODULES IN CORPORATED IN 3 UNITS IN LESSON PLAN, TO BE IN CORPORATED IN SYLLABUS

Program : Architecture		
Course Title: HISTORY OF ARCHITECTURE - II		Course Code: 15AATC205
L-S-P: 0-2-0	Credits: 2	Contact Hours: 2
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 32	Examination Duration: 3 HOURS	

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 Temples

Temples at Udayagiri, Tigawa, ,Bhitargoah

3. Evolution of Indo Aryan Temples

Orissan 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

- **Madurai Style - Meenakshi Temple at Madurai. Srirangam Temple**

Text Books:

NIL

Reference Books:

- Satish Grover: The Architecture of India

- Percy Brown : Indian Architecture(Buddhist and Hindu Period0
- Tadgell Christopher:The History of Architecture in India
- Rowl Benjamin. Art and Architecture of India
- Vistara . The Architecture of India
- Yatin Pandya: Concept of space making in Indian traditional Architecture

Scheme for Semester End Examination (ESA)

NOTE: ALTHOUGH THE MODULES IN CORPORATED IN 3 UNITS IN LESSON PLAN, TO BE IN CORPORATED IN SYLLABUS

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions

Program : Architecture		
Course Title: Digital Tool- I		**Course Code: 15AATP201**
L-S-P: 0-2-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: 3 HOURS**	

UNIT I:

- **Basic Hardware and components of computer.**

Introduction to a Brief history of computers, hardware components of computer, knowledge of different types of OS. Introduction to Digital tools of Architecture and Design, (scanner, Digitizer, plotters).

- **Introduction to Windows, Office and PowerPoint**

Introduction to Windows OS History and present OS. Understanding various components of OS like desktop, Short cuts, Etc. creating file structure, files, folders, Installing and managing software's, working with MS office and PowerPoint creatively for various presentations in sync MS paint and note pad,

UNIT II:

- **Introduction to Sketch up.**

Basic drawing and editing tools, measuring and dimensioning tools, etc

- **Introduction to Advance Sketch up**

Advance tools for developing and creating architectural design using advanced features

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.

Text Books

1. **NIL**

Reference Books:

1. **Online Sketch Up Manual.**

Note:

- Journal Submission of commands related to the software and its tools.
- Assignments in form of soft copy & hard copy worked during the course.

Program : Architecture		
Course Title: STRUCTURES - III		Course Code: 15AATC206
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	

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:

1. Design philosophy of limit state method. Limit state for collapse for flexure.
2. Analysis of continuous beam by using IS 456-2000 and design by using SP16.
3. Design of beams by using SP 16
4. Analysis of one way continuous slabs by using IS 456-2000and design by using SP16.
5. Design of columns axial load and axial load plus uniaxial moment by using SP 16

UNIT III:

1. Case study of ongoing RC building structuresto correlate knowledge to on site during construction.
2. Typical reinforcement detail for beams isolated column with footing, slabs (one way and two way), staircases.

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. B.C.Punmia 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
5. I S 456, SP 24, SP 16

Scheme for Semester End Examination (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 to 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: Elective – Vernacular Architecture		**Course Code: 15AATE201**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

Introduction and Definitions.

Review of Vernacular Architecture in different parts of India in context to the Lifestyle and culture, House forms, climate, materials and construction techniques prevailing in these regions.

UNIT II:

Study of Vernacular styles of North and North East, North West, South India.

UNIT III:

Case study and documentation

Case study of a house form to collect data regarding lifestyle and culture, climate, materials, construction techniques and documentation of the same.(1field,book or net study)

Note – assignments**,** Seminars and a portfolio of the documentation of case study for evaluation.

Text Books:

NIL

Reference Books:

1. Paul Oliver (Ed), Encyclopedia of Vernacular Architecture of the world, vol 1,2,3,
2. Fletcher Bannister*:* History of Architecture
3. Rappoport Amos: History and Precedent of Environmental Design
4. Rappoport Amos: House Form and Culture
5. Rappoport Amos: Meaning of the built environment
6. Paul Oliver (Ed), Encyclopedia of Vernacular Architecture of the world, vol 1,2,3, Cambridge University press,Cambridge, 1977.
7. Bernard Rudofsky Architecture without architects.
8. Paul Oliver: Dwellings. Cambridge University press, Cambridge, 1977.
9. Galion and Eisner, 'Urban Pattern': City planning and Design. Ed, Van Nostrand Reinhold, New York, 1986.

Scheme for Semester End Examination (ESA)

Term work.

Documented measure drawing portfolio

Program : Architecture		
Course Title: Elective – Photography		**Course Code: AATE202**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

1. Introduction

a. Introduction to Architectural Photography
b. Theory of Photography
c. Understanding Light, aperture, Shutter speed and ISO
d. Types of Camera, Lens, and other accessories.

UNIT II:

2. Composition.

a. Understanding composition like rule of third, S- curve, balance etc..
b. Shooting Out-doors and In-doors
c. Colour management and post editing using software's
d. Camera Tricks to create special effect photography.
e. Analysis of Photographs.

UNIT III:

3. Documentation of Architectural buildings and interiors

a. Importance and use of architectural journalism
b. Documentation methods.
c. Presentation and compilation of Images and text.
d. Printing.

Text Books:

NIL

Reference Books:

1) Better photography monthly magazine
2) Basic photography for dummies

Scheme for Semester End Examination (ESA)

Assignments, Checking of Portfolio of Term Work / Viva.

Program : Architecture		
Course Title: Elective – Space, Culture & Architecture		**Course Code:** 15AATE203
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

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

Text Books:

NIL

Reference Books:

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

Program: Architecture		
Course Title: Elective – Digital Rendering		**Course Code: 17AATE204**
L-T-P:0-0-1	**Credits: 1**	**Contact Hours: 2**
ISA Marks:50	**ESA Marks:50**	**Total Marks:100**
Teaching Hours:28	**Examination Duration: NA**	

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

Text Books

Reference Books: Online tutorials

Scheme for Semester End Examination (ESA)

Assignments, Checking of Portfolio of Term Work / Viva.

Program : Architecture		
Course Title: Elective – Space Making		**Course Code:** 15AATE205
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

Introduction to different space making elements.

Understanding and appreciating different space perceptions.

UNIT II:

Study and analysis of few Important Architectural Spaces with different parameters

UNIT III:

Understanding contemporary approaches in space making.

Understanding of the term space formation and its importance in Architecture.

Text Books:

Nil

Reference Books:

1) Space making elements by Yatin Pandya.
2) J Habraken *Sociologic of space*

IV SEMESTER

Program : Architecture		
Course Title: DESIGN STUDIO – IV		Course Code: 15AATC208
L-S-P: 0-8-0	Credits: 6	Contact Hours: 9
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 144	Examination Duration: NA	

Course contents:

Project

1. Scale of a project shall be limited to allow for intensive study rather than repetition of typical configuration of housing
2. Project can be attempted with added complexities like dense context, occupation based, traditional urban fabric, social status & prevalent social strata.
3. Detail 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 ultimate way of the design.
4. project shall aim at developing a very sensitive attitude toward micro level human habitation & role of architecture in enhancing or curbing the quality of living
5. Examples apartment for IT employees, government servants, teaching faculty, textile workers, Luxury flats in the center of the city, group housing in suburbs, etc.

Students may be required to develop a brief, translate it in to requirements and Design. At least one major exercise and one minor design/ time problem should be given. The topics not covered as design problems will have to be covered by the studio faculty members through lecture/slide show session and site visits.

The evaluation shall be through periodic internal reviews.

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

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

Scheme for Semester End Examination (ESA)

Checking of Portfolio of Term Work / Viva.

Program : Architecture		
Course Title: BUILDING CONSTRUCTION & MATERIALS - IV		Course Code: 15AATC209
L-S-P: 0-6-0	Credits: 4	Contact Hours: 6
ISA Marks: 70	ESA Marks: 30	Total Marks: 100
Teaching Hours: 96	Examination Duration: NA	

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.

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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.

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UNIT III:FLOOR FINISHES

- Various types, method of laying & maintenance for floor finishes using,
- Naturally available - i) clay & murrum 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

Text Books:

- McKay J.K Building Construction Metric Vol 1-4, 4th edi 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, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000
- "Building Construction" by Janardhan Jha, 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 19th edi, 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 – II (ELECTRICITY & ILLUMINATION)		Course Code: 15AATC210
L-S-P: 1-2-0	Credits: 2	Contact Hours: 3
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 48	Examination Duration: 2 HOURS	

UNIT I:

1. Brief Introduction to electricity, its uses in everyday life and as an architectural application.
2. Terminology used in electricity.
3. 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.

UNIT II:

3. Systems of wiring in building and their merits. Types of conduits, wires and cables. Accessories used in wiring.
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)
5. Branch circuits, calculation of electrical load for a residential building. Electrical symbols and Indian electricity rules-relevant codes of practice(NBC).
6. Electrical layout for different buildings. 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.
8. Methods of lighting- accent, ambient and task lighting.
9. 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.

UNIT IV:

10. Criteria's for selecting lamps for different occupanISAs.
11. Lighting design for different types of occupanISAs - landscape, parking areas, different tasks, street lighting, commercial building, residence.

Text 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.

Reference Books:

A manufacturer catalogues and journal references on electricity.

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions

Program : Architecture		
Course Title: HISTORY OF ARCHITECTURE - III		Course Code: 15AATC211
L-S-P: 3-0-0	Credits: 2	Contact Hours: 2
ISA Marks:50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 32	Examination Duration: 3 HOURS	

UNIT I:

Evolution of Imperial Indian Islamic Architecture in the following dynastic rule of

- Imperial style
- Provincial Style -I
- Provincial Style -II

UNIT II:

Evolution of provincial Indian Islamic Architecture in the following provinces of

- Provincial Style -II
- Mughal Architecture-I
- Mughal Architecture-II

UNIT III:

Evolution of Indian British Colonial architecture Architecture in the dynastic rule of

- Early British Colonial Style
- Late British Colonial Style

Text Books:

1. **Christopher Tadgel**, The History Of Architecture Of India
2. **Satish Grover,** Architecture of India – Islamic
3. **Percy Brown,** Indian Architecture - Islamic

Reference Books:

NIL

Note:

- A student (individually / group) in course of the semester shall present at least two seminars from above topics or as suggested by the subject teacher

Scheme for Semester End Examination (ESA)

NOTE: ALTHOUGH THE MODULES IN CORPORATED IN 3 UNITS IN LESSON PLAN, TO BE IN CORPORATED IN SYLLABUS

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	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	5, 6	Solve Any **1** out of **2**

Program : Architecture		
Course Title: THEORY OF ARCHITECTURE		**Course Code: 15AATC212**
L-S-P: 2-0-0-1	**Credits: 2**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: 3 HOURS**	

UNIT I:

1. Principles of architectural composition:
   Unity, Balance, Proportion, Scale, Contrast, Harmony, Accentuation, Restraint. Repose, Vitality, Strength in the built environment
2. Underlying Organizing Principles
   Symmetry, hierarchy, datum, axis, rhythm in the built environment, examples drawn from both historical and urban context
3. Underlying Spatial Organizations of built fabric
   Linear, centralized, radial, Clustered, Grid. Examples drawn from both historical and urban context.

UNIT II:

Theory in Antiquity & Renaissance
18th century theory
19th century theory

UNIT III:

Contribution of architectural theoreticians
Architectural Criticism

Self Study:

: Understanding the Built environment

Students will explore such questions as:
What is the built environment? What role does it play in our life?
How does it come about? How are ideas and meaning embedded in the world we make?

Students will comprehend conceptual basis of the design disciplines, terminology regarding form, function, and technology of buildings; and methods used in the design process.

Students will explore issues related to intent, values and design; site, and context; buildings and cities, and relationships between culture, place and meaning;

Students will increase their understanding of the human significance of the built environment.

Student Performance Criteria addressed:

Communication Skills
Design Thinking Skills
Visual Communication Skills
Investigative Skills
Fundamental Design Skills
Use of Precedents
Ordering System Skills
Historical Traditions and Global Culture
Cultural Diversity
Site Design
Structural Systems
Human Behavior
Leadership
Community and Social Responsibility

Topical Outline

The built environment as human habitat
Theoretical constructs for understanding & analyzing the built environment
Architecture as a combination of form, function, technology
Urban environments
Exploring the relationships between culture, values, meaning and place

Prerequisites: None

None.

Deliverables:

Application of the theoretical base to the human settlement site , analysis and interpretation of the same.

Four hours are incorporated after the completion of respective chapters

Text Books:

NIL

Reference Books:

1. Bernard Rudofsky, *Architecture without Architects* .a short introduction to Non-Pedigreed Architecture. Academy Edition London
2. *Francis D K Ching,* Form Space and Order
3. *Parmar* V S*, Design* Fundamental in Architecture
4. *Howard Robertson,* The Principles of Architectural Compositions
5. *J.M.Zunde* ,Design Procedures – level 4
6. *Barbara lee Dia Monstein,* Architect ,Architecture in Collaboration
7. *Mike Dartion,* The illustrated Book of Architect & Architecture

8. *Kenshiro Takamii, Decora,* Ornamental Motif of the World.
9. *Enrico Guidon,*Primitive Architecture
10. *Arthur Statton*, Elements of Forms & Design in Classic Architecture
11. *Tim Charlotte,* Forms & Function - a source book for the History of Architecture
12. *Christian* Norberg Shulz, Genius Locii
13. *Vitruvious* : Ten Books on Architecture
14. *Alberti Leon:* Ten Books on Architecture
15. *Alexander Christopher ;*Urban Pattern
16. *Alexander Christopher:* Timeless way of Building
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. *Rappoport Amos:* House Form and Culture
24. *Rappoport Amos:* Meaning of the built environment
25. *Geoffrey Broadbent*: Design in Architecture
26. *Geoffrey Baker*: Design strategies in architecture: An approach to analysis of form
27. *Attoe Wayne:* Architectural and critical imagination
28. *Hale A Jonathan:* Building Ideas, An introduction to Architectural Theory
29. *Lynch Kevin: City Sense*
30. *Lynch Kevin: Image of the City*
31. *Sociologic of space*
32. *J Habraken :*The Structure of the ordinary

Course Title: LANDSCAPE DESIGN		Course Code: 15AATC213
L-S-P: 1-1-0	Credits: 2	Contact Hours: 3
ISA Marks: 70	ESA Marks: 70	Total Marks: 100
Teaching Hours: 42	Examination Duration: NA	

UNIT I:

Introduction to landscape architecture and role of Landscape design in built environment. Evolution of concepts in landscape design in integrating built spaces to open spaces

UNIT II:

Landscape elements-land forms, water and vegetation. Principles of landscape design, and built environment. Selection and management of plant material in relation to built environment, taxonomy and classification of plants. Study and analysis of existing landscaped areas Introduction to study of plant materials in relation to landscape architecture and design. Appearance, functional and visual effects of plants in landscape design Selection and management of plant material in relation to built environment, taxonomy and classification of plants, trees, shrubs

UNIT III:

Site planning and site analysis with reference to different characteristics like topography, vegetation, hydrology, access, surroundings etc. Philosophical and design issues related to site development-spatial and contextual relationships of built and outdoor space and circulation, site and its relationship to surroundings, importance of climate and social factors in development of site.

Natural and manmade landscape in urban and rural landscape. Contemporary attitude to development and design of open spaces-like urban spaces, courtyards, gardens, parks, Streetscape, street furniture, lampposts, pavements and other architectural elements in relation to architectural design

Studio exercises emphasizing relationship between built form and outdoor areas and site planning issues.

Note – The Portfolio covering the above topics shall be presented for Term work. Minimum one plate from each unit., site visits to be arranged by studio teacher. Study of material application shall be submitted in the form of journal.

Text Books: NIL

Reference Books:

).Blane Alan, Landscape Construction and detailing B T Batsford Ltd, London 1996.

2) Colise Brenda, Land and Landscape.

3) G. Eckbe “Landscape for Living”

4) Trivedi, P. Pratibha, Beautiful Shrubs. Indian Council of Agricultural Research, New Delhi, 1990.

5) Lynch, Kevin, Site Planning, IT Press, Massachusetts, 1962.

6) Laurie, Michael, An introduction to Landscape, II Ed, Prentice Hall, New Jersey, 1986

7).Santapau. H. Common Trees, National Book Trust, NewDelhi, 1981.

8) J.O. Simmonds, “Landscape Architecture”

Scheme for End Semester Assessment (ESA)

Evaluation of Portfolio of Term Work / Viva

Program : Architecture		
Course Title: DIGITAL TOOL - II		Course Code: 15AATP202
L-S-P: 0-0-2	Credits: 2	Contact Hours: 2
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 32	Examination Duration: NA	

UNIT I:

- **Introduction to CAD Environment**: Introduction to The world space, user co-ordinate system (ucs). Command line and menus, to learn basic commands like, units, limits, line, circle, arc. Etc. Use editing commands like trim, extend, erase, offset to create basic shapes.

UNIT II:

- **2D Drafting**: Use basic drawing and editing commands to create 2d architectural plans, elevations, and sections, adding text and dimensions creating layers using advance editing commands.
- **Composing and printing**: Creating detail sanction drawings, Using plot for output saving drawings in different file formats. Creating 2d drawings from google earth and importing images in cadd.

UNIT III:

- **Introduction to Photoshop:** file formats, importing and enhancing cad drawing images using masks, layers, fills, and editing tools.

Text Books:

NIL

Reference Books:

1.) AutoCAD 2007 For Dummies. by David Byrnes, Mark Middle brook.
Publisher: For Dummies; Revised edition (May 8, 2006)
ISBN-10: 0471786497, ISBN-13: 978-0471786498

2.)Enhancing CAD Drawings with Photoshop by Scott Onstott
Publisher: Sybex (January 21, 2005) Language: English
ISBN-10: 0782143865 ISBN-13: 978-0782143867

Program : Architecture		
Course Title: STRUCTURES - IV		Course Code: 15AATC214
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	

UNIT I:

1. 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.
2. 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:

1. Design of roof truss elements strut and tie.
2. Design of elements of braced streel structural system, compression members of single and built up sections. Design of compression members using SP 6 part I.
3. Design of slab base and foundation subjected to axial laod.

UNIT III:

1. Design of laterally restrained beams.
2. Moment resisting frames, comparison with braced frames, different types, composite structures.
3. Case study of steel building structures.

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 Semester End Examination (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**

B.ARCHCURRICULUM SCHEME & STRUCTURE OF 2015-2020 BATCH

V Semester - VI Semester

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

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

B. Arch. Semester V 2015-20

No	Code	Course	Category	L-S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration	
1	15AATC301	Architectural Design V	Design	1-5-0	6	9	50	50	100	NA	
2	15AATC302	Building Const& Materials V	Construction	1-3-0	4	6	50	50	100	NA	
3	15AATC303	Services III (HVAC)	Construction	2-0-0	2	2	50	50	100	3 HOURS	
4	15AATC304	Modern Architecture	Design	2-0-0	2	2	50	50	100	3 HOURS	
5	15AATC305	Working Drawing	Construction	0-2-0	2	3	50	50	100	NA	
6	15AATC306	Quantity survey & specification	Profession	1-1-0	2	3	50	50	100	3 HOURS	
7	15AATC307	Structures – V	Construction	3-0-0	3	3	50	50	100	3 HOURS	
8	 15AATE301 15AATE302 15AATE303 15AATE304 15AATE305	Elective II Sustainable development of living cultural heritage-I Advance Computers-I Productive landscape Hands on workshop Digital 3D	Design	0-1-0	1	2	50	50	100	NA	
TOTAL				11-11-0	22	30	400	400	800		

ISA: Continuous Internal Evaluation ESA: Semester End Examination L: Lecture S: Studio P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

B. Arch. Semester VI 2015-20

No	Code	Course	Category	L-S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATC308	Architectural Design VI	Design	1-5-0	6	9	50	50	100	NA
2	15AATC309	Building Const& Materials VI	Construction	1-3-0	4	6	50	50	100	NA
3	15AATC310	Services IV (Acoustic)	Construction	2-0-0	2	2	50	50	100	3 HOURS
4	15AATC311	Contemporary Architecture	Design	2-0-0	2	2	50	50	100	3 HOURS
5	15AATC312	Professional Practice - I	Profession	1-1-0	2	3	50	50	100	3HOURS
6	15AATC313	Interior Design	Design	0-3-0	3	5	50	50	100	NA
7	15AATC314	Structures – VI	Construction	3-0-0	3	3	50	50	100	3HOURS
TOTAL				10-12-0	22	30	350	350	700	

ISA: Continuous Internal Evaluation ESA: Semester End Examination L: Lecture S: Studio P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

V SEMESTER

Program : Architecture		
Course Title: Architectural Design – V		**Course Code: 15AATC301**
L-S-P: 1-5-0	**Credits: 6**	**Contact Hours: 9**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 144	**Examination Duration: NA**	

Course contents:

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

The design issues to be addressed are

- Multi user and multi level space formation
- Integration of material and form.
- Integrate the horizontal and vertical circulation.
- Develop skills to correlate the materials and the resulting form.
- 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, formulation of design brief, conceptual sketches, design development

Preliminary Design Development stage: Schematic drawings of plans with furniture Layout, sections, elevations and study models

UNIT II:

Secondary Design Development stage : Development of detail plans, elevations and sectional details, Models, Development of Three dimensional massing with corresponding fenestrations, etc.

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

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, Kerier, Roab

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.

Program : Architecture		
Course Title: BUILDING CONSTRUCTION&MATERIALS- V		**Course Code: 15AATC302**
L-S-P: 1-3-0	**Credits: 4**	**Contact Hours: 6**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 96	**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 Windowsin steel fabricated with "Z" section and pressed metal (box) sections.

Sliding windows in Aluminum and PVC including safety arrangement.

UNIT III: PARTITIONS AND FALSE CEILINGS

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

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

Materials:-

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

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:NIL

Reference Books:

- McKay J.K Building Construction Metric Vol 1-4, 4th edi 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.
- RangawalS.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 regularlyand tests conducted

Scheme for Semester End Examination (ESA): Evaluation of term work portfolio & Viva

Program : Architecture		
Course Title: SERVICES – III (HVAC)		**Course Code: 15AATC303**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: 3 HOURS**	

UNIT I:

1.Passive and Mechanical/Artificial ventilation- Need for mechanical ventilation in buildings, Applications in different criteria's.

Air conditioning- Definition, Refrigeration cycle. Compressor, Condenser, evaporator in air-conditioning.

2.Different types of Air conditioning –Ductable non ductable air conditioners, Location analysis of different equipments in different types of buildings. Air distribution systems- ducts, diffusers etc and architectural requirements of the same. Zoning purpose, advantages and disadvantages of the same

UNIT II:

3.Factors responsible for calculation of air conditioning load. Application of appropriate AC system for different types of occupancies like Residential, commercial, industrial etc.

Elevators: Introduction, different types of elevators like traction, hydraulic, double deck elevators, sky lobby, structure and interiors of lifts.

4.Passenger handling capacity, space and physical requirement and layout. Locational analysis of elevators, grouping of elevators.

Escalators: Definition, structure and different parts of escalator, Application, Location and arrangement in different types of buildings.

UNIT III:

5.Fire safety of buildings: Origin and causes of fire in buildings, fire load, fire hazards, material properties.

Passive fire protection: Application of fire resisting materials, Comapartmentation, fire escape routes.

6.Active fire protection: Portable fire extinguishers and different types. Non portable fire extinguishers, required water supply for the same, automatic fire detection and Alarm systems.

Rules for fire protection and fire fighting requirements for high rise buildings in India.

Text Books:NIL

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)

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: Modern Architecture		**Course Code: 15AATC304**
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: NA**	

UNIT I:
characteristics of Renaissance architecture
Transitional period and Revival architecture
Early Industrial buildings Arts & Craft Movement and Art Noueavau.

UNIT II:
The Chicago school and Italian Futurism
De Style and Bauhaus
Ideas and Works of Le Corbusier andMies Van Der Rohe,
Ideas and Works of Le Corbusier and Louise Kahn in India

UNIT III:
Ideas and Works of Frank Llyod wright
Ideas and Works of architects AchyutKanvinde, 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: 15AATC305**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**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:

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

ISBN-13: 978-0471574880

2.) 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

3.) 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: Quantity survey and specifications.		**Course Code: 15AATC306**
L-S-P: 1-1-0	**Credits: 2**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: 3 Hours**	
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.		
Text Books: NIL		
Reference Books: 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 – V		**Course Code: 15AATC307**
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**	

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 the roof 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, 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. Design of dogged legged stairs

Text Books:

Reference Books:

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

Program : Architecture		
Course Title:Elective-Sustainable Development of Living CulturalHeritage		**Course Code: 15AATE301**
L-S-P: 0-2-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**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:

Final proposal and report

Text Books:

NIL

Reference Books:

1. Bernard Rudofsky, *Architecture without Architects* .a short introduction to Non-Pedigreed Architecture. Academy Edition London
2. Enrico Guidon,*Primitive Architecture*
3. Christian NorbergShulz, *Genius Locii*
4. Alexander Christopher *;Urban Pattern*
5. Alexander Christopher*: Timeless way of Building*
6. Feilden Bernard, *Guidelines for Conservation ,A technical manual*

7. *Jacobs,J* (1961) The Death and Life of Great American Cities, NewYork,Random House.
8. *Lynch,K* (1981) A Theory of Good City Form, MIT Press
9. UNESCO Operational Guidelines 2012
10. UNESCO Nomination Dossier manual 2012
11. UNESCO paper series

Website: *ICOMOS* , ICCROM , UNESCO

Project Report,,Place Making " A Synthesis of Professional Practice & Case studies about better living Environment , RUDI (Resource of Urban Design Information)

Scheme for Semester End Examination (ESA)

Checking of Portfolio of Term Work / Viva

Program : Architecture		
Course Title:Elective-ADVANCE COMPUTERS - I		**Course Code: 15AATE302**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

1. Introduction Raster and Vector graphics.
2. Introduction color modes and pixels.
3. Introduction typography, animation, video and sound.

UNIT II:

1. Introduction Adobe indesign software
2. Page layout tools and commands in adobe indesign software

UNIT III:

1 Interactive tools commands in adobe indesign software
1. Various export file formats

Text Books: Nil

Reference Books:

Online tutorials

Scheme for Semester End Examination (ESA)

Checking of Portfolio of Term Work / Viva

Program : Architecture		
Course Title:Elective-Productive landscape		**Course Code: 15AATE303**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

- Introduction to different types of productive landscape in interior and exterior spaces of building.
- Study of Different methods of productive landscape.
- Basics of different types of grow mediums, soil and plants.

UNIT II:

- Maintaining, pest and disease control of plants
- Water management and Fertilizers for the good health and food production of plants
- Organic and sustainable methods of growing plants in small spaces

UNIT III:

- Introduction to vertical farming.
- Literature and Case study.

Text Books: Nil

Reference Books:

1. Blane Alan, Landscape Construction and detailing B T Batsford Ltd, London 1996.
2. Laurie, Michael, An introduction to Landscape, II Ed, Prentice Hall, New Jersey, 1986

Website:

Project Report

Scheme for Semester End Examination (ESA)

Checking of Portfolio of Term Work / Viva

Program : Architecture		
Course Title:Elective- Hands on workshop		**Course Code: 15AATE304**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

- Introduction to different types of hands on projects
- Case study and literature study of the selected project.
- Data collection and material study of the project.

UNIT II:

- Development and execution of the project with hands on experience.
- Continual development and real time design and material application on scaled models and life scale models.

UNIT III:

- Hands on execution with improvements and Documentation of the project from start to finish.

Text Books: Nil

Reference Books:

1. Ching, Francis DK, Architecture: Form, Space and Order, 2nd ed.VanNostrand Reinhold, New York, 1999
2. Visual Intelligence: How We Create What We See by Donald D. Hoffman (Author) Publisher: W W Norton & Co Ltd; New Ed edition (29 Feb 2000)
3. Building Construction Hand book:By R Chudly& R Greeno,BullerworthHeinemann,New-Delhi.

Website:

Project Report

Scheme for Semester End Examination (ESA)

Checking of Portfolio of Term Work / Viva

Program: Architecture		
Course Title: Elective - DIGITAL 3D		**Course Code: 15AATE205**
L-T-P 0-0-2	**Credits: 2**	**Contact Hours: 28**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28 hrs	**Examination Duration: 2hrs**	
Unit I 1. Understanding the Basics of Rhino 2. Working with the tools for design 3. Basic modeling using tools in Rhino		
Unit II 1. Understanding the Basics of Grasshopper 2. Working with the tools for design 3. Basic modeling using tools in Grasshopper 4. Simulating Rhino design with Grasshopper		
Unit III 1.Presenting the modeled design using the software knowledge		
Text Books - NIL		
Reference Books: - NIL		

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Chapter numbers	Instructions
I	8 designs of Rhino models	1	To be completed in class hours
II	8 designs of Grasshopper models	2	To be completed in class hours
III	8 simulation designs	3	To be completed in class hours

VI SEMESTER

Program : Architecture		
Course Title: Architectural Design – VI		Course Code: 15AATC308
L-S-P:1-5-0	Credits: 6	Contact Hours: 9
ISA Marks:50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 144	Examination Duration: NA	

Course objective:Application of an understanding of structures and services in the design of social infrastructure in an urban context.

Course contents:

1. Project shall be of multiple functions and with a need for imagery as one of the architectural goals.
2. Design project should be a complex building involving an advanced level of services and structural system. Example: Exhibition and display pavilions, theme based hotels, sports facilities, medical facilities and shopping centers etc
3. Design emphasis shall be on the use of innovations in materials and techniques of construction.
4. Alternative to the emphasis on imagery, projects involving large span structure like industrial Structures may be attempted. Design emphasis shall be on the skin and support of structural Systems and resulting architectural form.

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 plans with furniture Layout, sections , elevations and study models

UNIT II:Secondary Design Development stage : Development of detail plans, elevations andsectional details, Models, Development of Three dimensional massing with corresponding fenestrations, details of services and structural system.

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

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

The evaluation shall be through periodic internal reviews.

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.

Course Title: BUILDING CONSTRUCTION & MATERIALS - VI		Course Code: 15AATC309
L-S-P: 1-3-0	Credits: 4	Contact Hours: 6
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 96	Examination Duration: NA	

UNIT I: STEEL STRUCTURES

Various steel sections and its use as, single or composite for column and beams, including connection methods. Steel grillage foundation.

UNIT II: STEEL BEAMS AND GIRDERS, TRUSSES, PORTAL FRAME & PEB

Girders: Types of girders like, standard sections, lattice, plate, castellated, veirendiel and portal frame.

Trusses: Types of roof trusses. Detailing of ridged & North light roof truss, including fixing of roofing materials

PEB: Introduction, fabrication and selection criteria.

UNIT III: MATERIALS:

Waterproofing and weather proofing materials like chemical admixtures and surface application. and Properties and architectural uses of ferrous and non-ferrous metals.

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, 4th edi 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, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000
- "Building Construction" by JanardhanJha, Khanna New-Delhi.
- RangawalS.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 19th edi, 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 regularlyand tests conducted

Scheme for Semester End Examination (ESA): Evaluation of term work portfolio & Viva

Course Title: SERVICES – IV(Acoustic)		Course Code: 15AATC310
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	

1. UNIT I:

Introduction to the study of acoustics

1. Basic terminology-propagation, frequency, pitch, tone, sound pressure, intensity of sound' velocity of sound,decibel scale, loudness, threshold of audibility, pain, masking effect, sound and distance.
2. Behavior of sound in an enclosed spaces----- reflection of sound from plane, convex and concave surfaces, diffraction of sound, masking effect, articulation test, echoes, whispering galleries, sound foci and dead spots.
3. Effect of noise, various types of noises, air borne and structure borne noise, impact noise, acceptable noise levels, transmission loss.

2. UNIT II:

Acoustic materials and Definition of noise.

1. Various sound absorptive materials, construction details, special sound absorptive materials used for multi-purpose activities, absorption coefficient, reverberation, reverberation time calculation
2. Environmental noise Road, rail and air traffic and means of controlling and insulation, Industrial noise air turbulence, friction, methods of reduction by enclosures and barriers, sound isolationthrough landscape elements, land use planning for noise control
3. 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.
4. Noise reduction from mechanical equipment, rubber mounts, vibration isolation of machines, pumps and generators, noise in a.c. ducts, acoustical filters, electronic sound amplification and distribution. Systems, loud speaker layout.

UNIT III:

Study and development of ---Auditorium and theaters

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.

Reference Books:

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

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

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

4. 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

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

Internal Semester Assessment (ISA)

Minor tests 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 : Architecture		
Course Title: Contemporary Architecture		**Course Code: 15AATC311**
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:

1) Post-independence architecture in India –

1. Ideas and Works of architects i.e. AchyutKanvinde, B. V. Doshi, Charles Correa, etc
2. Ideas and Works of architects i.e. Raj Rewal, Uttam Jain, Laurie Baker, etc

UNIT II:

2) Contemporary western architecture –

1. Ideas and Works of post modern architects i.e. Richard Meier, Charles Moore, etc.
2. Ideas and Works of de-construction architects i.e. Bernard Tschumi, Frank Gehry, ZahaHadid, Daniel Leibskind, etc.
3. Ideas and Works of hi-tech architects i.e. Norman Foster, Renzo Piano, Richard Rogers, etc.
4. Ideas and Works of artist and architects i.e. Santiago Calatrava
5 Ideas and Works of Rem Koolas, Zahahadid, Daniel Liebskind

UNIT III:

1) Contemporary Indian architecture

1 Ideas and Works of Hafeez contractor, Sanjay mohe,RahulMehrotra ,ShirishBeri, Sanjay Puri, Christopher chares Benninger,etc

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,** Currant 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 : Architecture		
Course Title: Professional practice - I		**Course Code: 15AATC312**
L-S-P: 1-1-0	**Credits: 2**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: 3 HOURS**	

UNIT I:

1. Tenders –Tender documents, Types, Tendering Procedure, Tender Notice, EMD, Mobilisation Fund, Security Deposit, Retention Amount, Mobilisation Fund, Contractor's Profit, Work Order, and Letter of Acceptance.

2. 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 II:

3. Arbitration and Conciliation – Methods to settle disputes and differences, Arbitration – Types, Arbitrator, power and duties of Arbitral Tribunal, Umpire, Awards and Conduct of arbitration proceedings. Conciliation – Duties of Conciliator. Arbitration and Conciliation Act 1996.

4. Dilapidation and Easements –

Dilapidation - Definition, Characteristics, Schedule of Dilapidations, Preparation of Dilapidation Report

Easements – Definition, Various easement rights, process and precautions to be taken by the architect in protecting or preventing the concerned parties from acquiring such rights.

UNIT III:

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

Text Books:NIL

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

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 : Architecture		
Course Title: Interior Design		**Course Code: 15AATC313**
L-S-P: 0-3-0	**Credits: 3**	**Contact Hours: 5**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 80	**Examination Duration: NA**	

UNIT I:

- History of Interior Design
- Interior Space and its definitions

UNIT II:

- Material information and its application.
- Detailing

UNIT III:

- Hands on experiment with different materials and its usage in interior spaces.

Text Books - NIL

Reference Books:

1 CHING

2 Rendering with Pen & Ink.

Scheme for internal Assessment (ISA): Evaluation of term work regularlyand tests conducted

Scheme for Semester End Examination (ESA): Evaluation of term work portfolio & Viva

Program : Architecture		
Course Title: STRUCTURES - VI		**Course Code: 15AATC314**
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**	

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 the computer added structural analysis and design.

UNIT II:

4. Introduction to lateral load resisting system
5. Shear wall system
6. Dual system

UNIT III:

7.Braced frame

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**

B.ARCHCURRICULUM SCHEME & STRUCTURE OF 2015-2020 BATCH

VII Semester - VIII Semester

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

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

B.Arch. Semester VII

No	Code	Course	Category	L-S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATC401	Architectural Design VII (Urban Insert)	PC	0-7-0	7	10	50	50	100	NA
2	15AATC402	Building Const& Materials VII	BS&AE	1-3-0	4	6	50	50	100	NA
3	15AATC403	Settlement Planning	PC	2-0-0	2	2	50	50	100	3 HOURS
4	15AATC404	Dissertation	PAE	0-3-0	3	4	50	50	100	NA
5	15AATC405	Professional practice - II	PAE	3-0-0	3	3	50	50	100	3HOURS
6	15AATC406	Structures – VII	BS&AE	0-3-0	3	4	50	50	100	NA
TOTAL				6-16-0	22	29	300	300	600	

ISA: Internal Semester Assessment , ESA : End Semester Assessment , P : Practical, S : Studio , L : Lecture,
(PC-Professional Core, BS & AE- Building Sciences & Applied Engineering, PAE- Professional Ability Enhancement)

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

B.Arch. Semester VIII

No	Code	Course	Category	L-S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATC407	Architectural Design VIII (Campus Planning)	PC	0-7-0	7	10	50	50	100	NA
2	15AATC408	Pre-thesis	PC	0-3-0	3	4	50	50	100	NA
3	15AATC409	Digital tool- 3 (Revit)	PAE	0-0-3	3	4	50	50	100	NA
4	15AATC410	Online Portfolio	PAE	0-0-2	2	3	50	50	100	NA
5	15AATC411	Construction Management	PAE	3-0-0	3	3	50	50	100	3 Hours.
6	15AATC412	Green Building Studio	PAE	0-2-0	2	3	50	50	100	NA
7	15AATE407 5AATE408 15AATE409 15AATE410	Elective-III Architectural Film Making-I Sustainable development of living heritage –II Transit Oriented Development Architectural Lighting	PAE	0-2-0	2	2	50	50	100	NA
TOTAL				3-14-5	22	29	350	350	700	

ISA: Internal Semester Assessment , ESA : End Semester Assessment , P : Practical, S : Studio , L : Lecture,
(PC-Professional Core, BS & AE- Building Sciences & Applied Engineering, PAE- Professional Ability Enhancement)

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

VII SEMESTER

Program : Architecture		
Course Title: DESIGN STUDIO-VII (Urban Insert)		CourseCode: 15AATC401
L-S-P: 0-7-0	Credits: 7	ContactHours:10
CIE Marks: 50	SEE Marks: 50	Total Marks: 100
Teaching Hours: 160	Examination Duration: NA	

Course Overview:

" Each generation writes its own biography in the cities it creates". *Lewis Mumford, The Culture of the City*

The course focuses on creating awareness in students in the subject of Urban Design as a specialization in the field of Architecture and urban planning

This studio will explore the discipline of urban design. Urban design is the creation of the physical structure for collective life: making places for people. It is a generalist discipline focused on the building of human settlements. We lay our cities, roads, parks and buildings, in order to create places where humanity can go about the complicated business of daily life.

As urban designers we are answerable not just to our clients but to everyone, generations past, present and future, all of whom must live together in the places on which we work. Ultimately we strive to make places for people that are sustainable, beautiful, inspiring and open, for the best places are never finished. Urban designers work at a range of scales, from street furniture all the way up to regions.

Objectives of the course:

- Identify and analyze how people perceive and navigate their communities
- To give an overview of urban design as an interface between the fields of architecture and urban planning.
- Our approach to urban design engages the city as an integrated design problem which is best solved through a participatory design process. Drawing on multiple disciplines, you will study the process of working directly with communities to create visions for future change.
- The studio is intended to both introduce you to urban design and inform your understanding of building design in relation to existing contexts.
- The first half of the semester is focused on introducing new skills of urban design which involves field studies and analysis of the built environment and its embedded issues while the second half is devoted to expanding and developing design skills at the block and neighborhood scale.
- The urban design studio seeks to educate architects to be leaders for vision-based change at the scales of neighborhood, city and region. This studio builds upon and expands your design skills in architecture, urban design and landscape architecture, and introduces new skills in community leadership and urban design.
- To impart the knowledge about various developments in the field of urban Design.

Expected skills/Knowledge Transferred:

Skills to understand the principles and methodology involved in urban design projects in public and private developments through active participation with the stake holders and the authority

Urban design as a complex interdisciplinary process requiring strong leadership and a combination of skills. The community and urban design studio is designed to introduce you to new skills regarding community leadership and urban planning and development while expanding your existing skills as a physical designer. The exercise sequence relates directly to these various skills over the course of the semester.

Course contents

Based on the currents issues affecting the built environment in India or abroad, the studio is aligned accordingly to address the complexity through solutions..

The studio is divided into three phases

The first phase involves Site (urban/peri-urban, rural laboratory)Identification, inventory and analysis

Pre visit research, archival study appreciating the natural, cultural,historical, economical socio-political context (Data collection: Maps ,drawings ,CDP, building regulation ,Demography study , socio economic survey)

Field study and inventory exercise

Meetings with the stakeholders

Site analysis inferences is carried out by the pre formed groups of four to five students each. The inferences,individual and shared views are presented. The emerging issues are discussed in a group.

All groups present and discuss their respective SWOT observation,vision statement, Objectives, Strategies leading to a common vision statement.

The second phase of work focus on the preparation of master plans and design guidelines based on the conclusion drawn from the inventory and analysis phase, through agreed objectives for development and strategies and individual demonstration projects

The master plan and accompanying guidelines will be formulated simultaneously and will serve as the basis for individual test projects during the third phase

Third Phase Individual project Proposals

Note: *The above said task will be carry out in the holidays before the commencement of the semester and will take approximately two-three weeks*

Unit-I:

Site Analysis

(5 weeks in the studio) (1-6 week)

2-3 weeks on the site during VI Semester end holidays

Research and inventory

Appreciating the context through maps, context model, digital model

Analysis and identification of issues and impact assessment

Communication of analysis and conclusions through situation maps, analytical drawings, photo documentation, sketches drawings and other graphical material as required to illustrate issues with potential to influence the master plan

This information will be published in a binder that will act as a primary resource for the next phase of work.

Working as a studio you will explore economic, social and physical aspects of the neighborhood through maps, demographics, diagrams, photographs, and a large physical model. The analysis provides an opportunity for you to learn about the community. More importantly, effective representation of conditions sets the frame for a future. Analysis is the foundation upon which urban design and development proposals stand.

Unit-II: Urban Design Framework

4 weeks(6-10 weeks)

Formulating the Vision of the place

Formulation of Objectives

Development strategy (Land use, Zoning regulations, setting FAR, Ground Coverage, defined sustainable measures)

Develop graphic and verbal recommendation for essential design character of the overall site and its individual development. Each group will produce one master plan for specific area of the city/town/neighborhood.

Policy and development framework

Working as a studio group, you will transform community issues and objectives into a unified vision for the neighborhood with a series of strategies and an urban design framework. The urban design framework will establish a future vision of the corridors, districts, and neighborhoods of the community. The framework will establish significant places for public investment as well as important civic design features of private development.

Unit-III. Urban Design Project

4 weeks(10-14 weeks)

This unit will involve reading task followed by class room discussions.

Once the overall vision for the place has been formulated and development objective are chalked out, the group disperses. Each individual designer will zoom in to there respective areas of intervention for:

Project identification

Formulation of design program

Urban Design Project framework

Formulation of areas

Design development

Draft proposal

Final Project

In the final phase you will develop a single area of focus in detail, exploring site forces, development typologies, three-dimensional place making and representation. Your vision for change will be embodied through the designs of a development proposal at a critical location in the community. A catalytic project must inspire continued investment and pursuit of the larger urban design goals for community reinvestment.

The individual design solutions itself is defined in terms of allowing and constricting a set of processes in time and space. The challenge you face in the Urban Design Studio involves expanding the scale of the problem not only in space (the site is much bigger than in your previous studios), but also in time: the solution itself must allow for multiple possibilities over an extended period of time. In this sense your solutions must be concrete spatial proposals, but they should also be thought of as flexible temporal frameworks for urban change.

(15th week) +1 week for Final Presentation of individual interventions)

General Reading

1) Katz Peter,The New Urbanism: Toward an Architecture of Community.McGraw -Hill, Inc
2) *Larict, M and Macdonald*,E.Ed.2013. The Urban Design Reader, *Second Edition, Routledge.*
3) *Bacon N. Edmund.* Design of cities. Penguin Books, New York 1976.
4) *Krier Rob*, Urban Space 3rd Ed, Academy Editions, London 1984.
5) *KrierRob,*Town Spaces(Contemporary Interpretations in Traditional Urbanism),*Birkhauser-Publishers for Architecture*
6) Mumford Lewis City in History, Its origin transformation and its prospects.
7) SpreiregenPaul ,Urban Design: The Architecture of Towns and cities
8) *Alexander Christopher ;*Urban Pattern
9) *Alexander Christopher:* Timeless way of Building
10) *Alexander Christopher*: New Theory of Urban Design
11) *Alexander Christopher: Nature of Order,vol.1,2,3,4*
12) *Alexander Christopher*: Synthesis of Form
13) *Alexander Christopher:* City is not a Tree
14) *Rappoport Amos:* Human Aspect of Urban Form
15) *Rappoport Amos:* History and Precedent of Environmental Design
16) *Rappoport Amos:* House Form and Culture
17) *Rappoport Amos:* Meaning of the built environment
18) *Geoffrey Broadbent*: Design in Architecture
19) *Geoffrey Baker*: Design strategies in architecture: An approach to analysis of form
20) *Lynch Kevin: City Sense*
21) *Lynch Kevin: Image of the City*

Reference Reading book

1) *MoughtinClif ,*Urban Design ,Method and Techniques. Architectural Press
2) Lawson B,(1980)How Designers Think, London Architectural Press
3) De Bono,E(1977) Lateral Thinking, Harmondsworth: Penguin
4) *Jane Jacob, The Death and Life of Great American Cities*(1961) New York, Random House.
5) *Rudi & Academy of Urbanism,* Place Making 2009
6) *Atkins,* Hinkley Town Center Renaissance Master Plan
7) *DETR/CABE,*By design(2000)
8) *DTLR/CABE*, Better places to live (2001)
9) *Bartlett School of Planning,*The value of design (CABE online, 2002)
10) *English Heritage/CABE*, Building in context (2001)
11) *Robert Cowan (ed.),*Urban design guidance (Urban Design Group, 2002)
Robert Cowan, Place check - a user's guide (Urban Design Alliance)
12) Bentley,I (etal) (1985) Responsive Environments ,Architectural Press
13) *Colquhoun, I* (1995) Urban Regeneration
14) *DETR and CABE (2000)* By Design: Urban Design in the Planning System: Towards Better Practice
15) *Urban Design Compendium*
16) *DETR* (2000) Planning Policy Guidance Note 3:Housing
17) The *New Urbanism:*Towards an Architecture of Community, McGraw-Hill,Inc.
18) *Krieger,A (Ed.)* (1991) Towns and Town Making Principles, New York, Rizzoli
19) *Rogers,R* (1997) Cities for a Small Planet,Faber and Faber
20) *Rudlin,D. and Falk,N.(*1999) Building the 21st Century Home:The Sustainable Urban Neighbourhood,
21) *Tibbalds ,F* (1992) Making People-Friendly Towns, Longman
22) *Urban Task Force* (1999) Towards an Urban Renaissance, E & FN Spon (Final Report of the Urban Task Force)
23) *Urban Villages Group (*1992 and 1998) Urban Villages
24) *English Partnerships* (1996) Time for Design

25) *English Partnerships* / Urban Villages Forum (1998) Making Places
26) *English Partnerships* (1998) Time for Design II
27) *English Partnerships* (1999) Space for Growth
28) *Housing Corporation* (1998) Scheme Development Standards
29) *Housing Corporation/DETR* (1999) Housing Quality Indicators
30) Bentley,I (etal) (1985) Responsive Environments ,Architectural Press
31) *Colquhoun, I* (1995) Urban Regeneration

Web Sites

Council on Architecture and the Built Environment: www.cabe.org.uk

UDPFI Guidelines

Student Assessment

Participation- Field studies, Pin -ups, critique, discussion, activity engagement, studio attendance and preparation, formulation of Vision, Objectives and Strategies	Weight age in marks 30
Studio assignments- sketchbooks, drawings, maps ,report, interpretations from archival studies, observation SWOT analysis	
Individual design project- process and product	20
Total	50

Successful accomplishment of learning outcomes will be assessed, primarily, based on two tools

1.Rubrics for the studio assignments

2. The community design project, organized around project process, product, and presentation; and verbal critique and written comments from guest reviewers for process and final project presentations spread across series of internal reviews, external reviews, community participation, discussions, exhibitions/Urban Design Charrette /pechakucha

Rationale	
Analysis	Physical Analysis(Lynch, Lost Space Analysis, Connectivity, Morhphology,SWOT, Factors Affecting the sites
Principles	Theory of Built environment, Genius Locii,Urban Design Principles, Historic Urban Landscape, Valletta Principles for Historic towns and villages
Strategy	Open Space, Built Environment, Heritage, Natural Setting, Connectivity,Urban Infrastructure, social infrastructure ,Urban Block, density, urban morphology etc
Master Plan	Area development,sustainable design parameters, design for resilience and inclusiveness
Design	Block plan, public realm design, area codes, Building codes, street features, street furniture ,lighting
Conclusion	

Program : Architecture		
Course Title: Building Constructions & Materials- VII		**Course Code: 15AATC402**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 96	**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: Settlement Planning		**Course Code:** 15AATC403
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: NA**	

Course contents:

Unit-I: 1 INTRODUCTION TO HUMAN SETTLEMENTS

Elements of Human Settlements – human beings and settlements – nature shells&Net work – their functions and Linkages – Anatomy & classification of Human settlements – Locational, Resource based, Population size & Occupational structure. Human settlements during ancient medieval and modern periods India, Europe and other parts of the world.

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 ,Soria Y Mata, Kevin Lynch.

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, rationale of urban regulatory controls. Urban redevelopment and renewal, urban traffic and transportation planning

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

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.

6 EMERGING TRENDS IN URBAN PLANNING.

New Urbanism, Smart growth, TOD, Form-Based Codes, Rural village, Transect Future of cities and cities of future - Sustainable cities, Intelligent cities, Liveable cities, Resilient cities, Smart Cities, Global city, Eco city, Compact city, Vertical urbanism, MediCity, Sports city.

Program : Architecture		
Course Title: Dissertation		**Course Code:** 15AATC404
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**	

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 II		**Course Code: 15AATC405**
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:

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
2. **Supervision by Architects:**
   Site Visits, Meaning and Purpose of Supervision, Remarks on Site Book, Site Meeting and Bill Checking**Unit-II**
3. **National Building Code:**
   Need and nature of building codes, standards and regulations, overview of basic terminologies, nature of building codes in special regions like heritage zones, environmentally sensitive zones, disaster prone regions, coastal zones, hilly areas, etc. Norms for Vehicular Areas, Norms For Fire Protection, Norms for Building Services.
4. **Building Regulations:**
   Building Bye laws and Regulations, Setbacks and margins, norms for building projections in open spaces, considerations in Floor Area Ratio (FAR) and Floor Space Index (FSI), building height regulations, Study of local administrative provisions for obtaining building permits.

Unit-III

5. **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

Sessional Work (Internal semester assessment)

Scheme for Semester End Assessment (ESA)

Mode of assessment :

References :

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

Program : Architecture		
Course Title: STRUCTURES - VII		**Course Code: 15AATC406**
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

Sessional Work (Internal semester assessment)

Scheme for Semester End Assessment (ESA)

Mode of assessment :

Text Books:

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

Reference Books:

1. 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.

VIII SEMESTER

Program : Architecture		
Course Title:Architectural Design VIII (Campus Planning)		Course Code: 15AATC407
L-S-P: 0-7-0	Credits: 7	Contact Hours: 10
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 160	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: Pre-Thesis		**Course Code: 15AATC408**
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**	

Course contents:

Unit-I: The student shall submit a proposal towards a individual design dissertation project containing

- Skeletal foundation of the proposed thesis
- Relevance of the project to society and the place.
- Background information about the proposed thesis (archival study/ research)

Unit-II : The student shall submit a proposal towards a individual design dissertation project containing

- Case studies from literature and inter net
- Proposed live case studies
- Proposed schedule of visit to live case studies.
- Site selection criteria
- Norms and standards

Unit-III: The student shall submit a proposal towards a individual design dissertation project containing

- A report containing the all above mentioned information in paper presentation format
- The report should include Title and description of the topic
- Justification for Architectural intervention in context.
- Methodology of study and proposed architectural solution.
- Site analysis

Sessional Work (Internal semester assessment) Draft report containing all the above mentioned topics.

Scheme for Semester End Assessment (ESA) : Thesis Report/ Viva

Mode of assessment: Viva and thesis report/ Evaluation of Portfolio, assignments by internal and external examiners / Viva.

References: 1. Iain Borden, The Dissertation, 2005

2. Council of architecture, Archiving 14 Architecture thesis, NIASA,2014
3. Indian Institute of Architects, Architectural Footprints, IIA, 2014
4. IIA, COA, A+D, Previous thesis Reports, Architectural magazines, Time saver standards, etc.

Course Title: Digital Tool III (REVIT)		**Course Code: 15AATC409**
L-S-P: 0-0-3	**Credits: 3**	**Contact Hours: 4**
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: 15AATC410**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 03**
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)

Regula 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: Construction Management		**Course Code: 15AATC411**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: 3 HOURS**	

UNIT I:

1) Construction Project Management –
Concept, 5M's, Administration, Organization, Organization structure for different project & firms.

Project Manager- Qualities

Construction Management Process – Planning, Scheduling, Monitoring, Central Phase, Scheduling techniques – Bar charts, CPM & PERT networks for different projects.

UNIT II:

2) Mechanization in construction industry Equipments – Selection, Types, Working. Economic life of Equipments, Depreciation, Obsolescence

Construction Economics – Basic concept, direct & Indirect corts, sources of Finance.

Text Books:

1. "Construction planning, equipment and methods by R L Peurifoy.
2. "project management for architects" by S P Mukopadhyay

Reference Books:

1. "Pert and CPM " by L S Srinath.

Program : Architecture		
Course Title: GREEN BUILDING STUDIO		**Course Code: 15AATC412**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: NA**	

UNIT I:

1. Background on Green Design movement around the world and Introduction to Green Building Design.
2. Green Building Movement in India ; various organizations driving the movement and the current trends

UNIT II:

3. Introduction to LEED (US Green Building Council and LEED India) rating tools
4. Introduction to IGBC (Indian Green Building Council) rating tools
5. Introduction to GRIHA (The Energy and Resource Institute, New Delhi) rating tools
6. Brief introduction to BEE, EDGE Certification various other trends in green rating in India

UNIT III:

7. Guidance on Green Rating for a typical building with a detailed outline of the various parameters such as Site design, Energy, Water, Materials etc along with the necessary case studies
8. Exercise: Green Building Design of a Typical Housing/Office Building project

Text Books: Nil

Reference Books:

- USGBC LEED Reference manuals for various rating systems (www.usgbc.org)
- TERI : GRIHA Rating Manual Volume 1 to Volume 5 (www.grihaindia.org)
- IGBC Rating guidebooks for various types of buildings (www.igbc.in)

Electives

Program : ARCHITECTURE		
Course Title: ARCHITECTURAL LIGHTING		Course Code: 15AATE410
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.

Program : Architecture		
Course Title: Transit Oriented Development		**Course Code: 15AATE409**
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: Elective – Architecture Film Making - I		Course Code: 15AATE407
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: 15AATE408**
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

B.ARCHCURRICULUM SCHEME & STRUCTURE OF 2015-2020 BATCH

IX Semester - X Semester

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

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

B. Arch. Semester IX

No	Code	Course	Category	L-S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATT501	Professional Training	Profession	0-22-0	22	50	50	50	100	NA
TOTAL				0-22-0	22	50	50	50	100	

ISA: Internal Semester Assessment,ESA: End Semester Assessment, P:Practical, S:Studio,L: Lecture

Date: 18-03-2016

Program Head

B. Arch. Semester X

No	Code	Course	Category	L-S-P	Credits	L-S-P	Contact Hours	ISA	ESA	Total	Exam Duration
1	15AATC501	Architectural Design - IX (Thesis Project)	Design	0-20-0	20	0-18-0	18	50	50	100	NA
3	15AATE502 15AATE505 15AATE506	Electives-V Architecture and Human Behavior Documentation and Technical Writing Adobe Illustrator	Design	0-2-0	2	0-3-0	3	50	50	100	NA
TOTAL				0-22-0	22	0-24-0	24	150	150	300	

ISA: Internal Semester Assessment ,ESA: End Semester Assessment, P: Practical, S : Studio , L : Lecture,

IX SEMESTER

Program : Architecture		
Course Title: Professional Training		**Course Code: 15AATT501**
L-S-P: 0-22-0	**Credits: 22**	**Contact Hours: 50**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 800	**Examination Duration: NA**	

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.

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.,

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 DEISGN-IX (Thesis Project)		**Course Code: 15AATC501**
L-S-P: 0-18-0	**Credits: 20**	**Contact Hours: 24**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 384	**Examination Duration: Nil**	

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)
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

Program : Architecture		
Course Title: ELECTIVE-ArchitectureandHumanBehavior		Course Code: 15AATE502
L-S-P: 0-18-0	Credits: 2	Contact Hours: 24
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 384	Examination Duration: Nil	

Course contents:

UNITI:

IntroductiontoBehavioralandEnvironmentalPsychology.

EvolutionofHumanBehavior.

InteractionofManandenvironment,Manandbuiltformsandstudyofpsychologyofspaces.

MethodsandprocessofstudyinghumanpsychologyinthecontextofArchitecture.

UNITII:

TheHuman–Natureinterfacethroughthemediumof BiophilicDesign.

NatureinSpace–StudyofVisualConnectionwithNature,Non-VisualConnectionwithNature,Non-Rhythmic SensualStimuli,Thermal/AirflowVariability,PresenceofWater,DynamicandDiffusedLight,ConnectiontoNatural Systems.

NaturalAnalogues–StudyofBiomorphicformsandPatterns,MaterialConnectiontoNature,ComplexityandOrder

NatureoftheSpace–StudyofProspect,Refuge,Mystery,Risk/Peril

UNITIII:

BuildingSystems

Roomuse,geometry&meaning,hiddenbehavioralassumptions,adjacencies,verticalbypass &horizontalbypass,variousstagesinthedesignofbuildingsubsystems.

Building–BehavioralInterface

Geometryofspaces,theirmeaning&connotations,Socialorganizationofbuildings, Behavioralassumptionsintheplanningofnewtownsandneighborhoods,borrowedspace.

BehavioralDesign

Processorganizationchart,affinitymatrices,pictograms:behavioraldesignprocessmodel, designcontext,activity/adjacencyrelationship,evaluationchart,Areausefrequency program,simultaneoususe,communityutilizationmap,occupancyloadprofile,defensible space,EDRAetc.,

UrbanEnvironment

Patternsofactivityintimeandspace,theecologyofaneighborhoodparkandplayground, cross-culturalissues,social&psychologicalissuesintheplanningofnewtowns, environmentalperceptionsandmigration,awarenessandsensitivitytoopenspaces, environmentalcognition.

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

TextBooks:

1.Burnette,C.(1971).Architectureforhumanbehaviour.PhiladelphiaChapter:AIA.
2.Canter,D.andLee,T.(1974).Psychologyandthebuiltenvironment.NewYork:HalsteadPress.
3.Christopher,A.etal.(1977).APatternLanguage.NewYork:OxfordUniversityPress.
4.Clovis,H.(1977).BehaviouralArchitecture.McGrawHill.
5.Lynch,K.(1973).Theimageofacity.Cambridge:MIT._
6.Sanoff,H.(1991).VisualResearchMethodsinDesign.NewYork:JohnWiley&Sons._
7.Zeisel,J.(1984).Enquirybydesign:ToolsforEnvironment-BehaviourResearch.Cambridge:
CambridgeUniversityPress.
8.Zeisel,J.andEberhard,J.P.(2006).InquirybyDesign-Environment/Behaviour/Neuroscience in
Architecture,Interiors,LandscapeandPlanning.NewYork:W.W.Norton&Company.
9:EvolutionandHumanBehaviour:DarwinianPerspectivesontheHumanConditionbyJohnCartwright

Reference:

1:BuiltEnvironmentPsychology:AcomplexaffairofbuildingsanduserbyMr.SafiullaKhan,IntegralUniversity,India.

2:ArchitecturalPsychology–STJanitius,St.John'sCollege,Bangalore

3:SpacesofSocialInfluencebyAnnaPGawlikowska

4:PsychologyofArchitecturebyW.BroVictorGPopow
5:BehavioralArchitecture–SPAVijaywada

Program : ARCHITECTURE		
Course Title: DOCUMENTATION AND TECHNICAL WRITING		**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: 32	**Examination Duration:**	

Course contents:

UNIT I:

Documentation and Technical Writing

Introduction to Documentation And Technical Writing

Various process of Documentation media or technique

Monographs and Magazine Formats

UNIT II:

Effective Writing Skills

Dissertation / Thesis Report Writing

Compiling of Ideas and Thoughts generated during Design Process

UNIT III:

Research Paper / Article

Research paper / Article on any architect showcasing his design philosophy and architectural works

Scheme for Internal semester assessment(ISA)

Assignments in the form of Portfolio.

Scheme for Semester End Assessment (ESA)

Term work Evaluation

Mode of Assessment: Field work attendance , Assignment

Text Books:NIL

Reference : NIL

Program: Architecture		
Course Title: Elective – Adobe Illustrator		Course Code: 15AATE506
L-T-P:0-0-1	Credits: 1	Contact Hours: 2
ISA Marks:50	ESA Marks:50	Total Marks:100
Teaching Hours:28	Examination Duration: NA	

Unit I

Graphic Designs

Create everything from gorgeous print, web and mobile graphics to logos, icons, brochures, flyers, posters etc.

Unit II

Typographic Designs

Design typographic designs and add effects, manage styles, and edit individual characters

Unit III

Publish artwork to various media

Publish illustrations anywhere, including printed pieces, presentations, websites, blogs, and social media.

Text Books

Reference Books: Online tutorials

Scheme for Semester End Examination (ESA)

Assignments, Checking of Portfolio of Term Work / Viva.

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

CURRICULUM SCHEME & SYLLABUS OF

I Semester - II Semester

(Year of introduction-2018, Faculty-A, Architecture-AT, Core course-C, Humanities-H, Lab-L, Elective-E, internship-I, Practice-p, W-Project)

Semester: I – (2020 - 21)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	18AATC101	Architectural Design – I	0	4	0	50	50	100	4	6
2	18AATC102	Building Const& Materials – I	0	4	0	50	50	100	4	6
3	18AATC103	Graphics – I	0	4	0	50	50	100	4	6
4	18AATC104	Skill development workshop-I	0	2	0	50	50	100	2	3
5	18AATC105	Prehistoric Architecture	2	0	0	50	50	100	2	2
6	18AATC106	Basic Design	0	3	0	50	50	100	3	4
7	18AATC107	Structures – I	3	0	0	50	50	100	3	3
TOTAL			5	17	0	350	350	700	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:II (2020 - 21)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	18AATC108	Architectural Design – II	0	4	0	50	50	100	4	6
2	18AATC109	Building Const& Materials – II	0	4	0	50	50	100	4	6
3	18AATC110	Graphics – II	0	4	0	50	50	100	4	6
4	18AATC111	History of Architecture I	2	0	0	50	50	100	2	2
5	18AATC112	Skill Development Workshop II	0	2	0	50	50	100	2	3
6	18AATP101	Digital Tool-I	0	0	1	50	50	100	1	2
7	18AATC114	Structures – II	3	0	0	50	50	100	3	3
8	18AATC113	Surveying	2	0	0	50	50	100	2	2
TOTAL			7	14	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)

I- SEMESTER

Program : Architecture		
Course Title: ARCHITECTURAL DESIGN - I		Course Code: 18AATC101
L-S-P: 0-4-0	Credits: 4	Contact Hours: 6
ISA : 50	ESA: 50	Total Marks: 100
Teaching Hours: 96	Examination Duration: NA	

UNIT I:

Introduction to Human proportions, Anthropometry and space standards

Detailed study of spaces requirements with respect to single unit dwellings such as living, dining, bedrooms, kitchen, toilet etc. minimum standards for movements and vehicular data expression of design using the following.

Spatial perception of spaces

Study of anthropometrics

Circulation

Forms and integrity

Space planning

Architectural expression

UNIT II:

Introduction to Space making elements.

Defining the core space making elements like wall, openings, column, floors, roofs, stairs etc. its usage and importance in designing spaces of various needs. Measuring and plotting existing buildings to understand element and its role in space creation.

UNIT III:1 Designing a multi room space.

Designing and organizing spaces of various purposes with respect to movement, circulation, furniture layout, aesthetical relation of traditions, culture etc. expression of creativity in form making

The design issues to be addressed are

Various basic human functions and their spatial implications

Formulation of concepts

Anthropometry and furniture layout

Movement and circulation diagram

Interior volumes and space articulation through different materials.

Integration of form and function.

Study models.

The design projects could be, my dream house, guest house, farm house, tree house, cottage, etc.

Reference Books: Ching, Francis DK, Architecture: Form, Space and Order, 2nd ed.VanNostrand Reinhold, New York, 1999

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. 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
Text Books: NIL

Program: Architecture		
Course Title: BUILDING CONSTRUCTION & MATERIALS - I		**Course Code: 18AATC102**
L-S-P: 0-6-0	**Credits: 4**	**Contact Hours: 6**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 96	**Examination Duration: NA**	

UNIT I:

Basic building components, material convention, brick work & mortar building components - Introduction to and their functions in brief, like foundation, plinth, coping, DPC, floor, walls, lintels, D&W, weather shade, roof, parapet etc.

Material convention- Convention of construction materials, like brick & stone masonry, timber, ply wood, steel, glass, concrete, mortar, metal etc, used for representing, in plan, section and elevations

Tools- Introduction to various tools commonly used for excavation, masonry and carpentry works

Bricks and blocks- Introduction to burnt clay bricks, properties of good bricks, molding methods, and application. Blocks used as an alternative to bricks, such as i) adobe (stabilized mud), ii) hollow clay, iii) cementconcrete iv) fly ash v) autoclaved aerated concrete (AAC), etc.

Brick masonry- Types of bonds used in brick masonry, for walls & pilasters of varying thickness.

Mortar- Types, uses, & properties of bonding materials like clay, lime, cement, gypsum etc. Sources and qualities of good sand & alternatives in preparing mortars.

UNIT II:

Stone, stone masonry, foundation, plinth formation, lintels & arches

Stones – Geological classification, types, properties and uses of stones for building. By-products of stones such as ballast, aggregate, graded crushed stone & powder (M- sand).

Stone masonry- Types of bonds used in stone masonry.

Foundation: Introduction to excavation- types & behavior of soil. Types of shallow foundations in brick and stone & purpose, for load bearing structure.

Plinth formation- Construction and formation of plinth for building with masonry walls, using i) bricks ii) stones iii) CC blocks including refilling in and consolidation.

Lintel and arches- Introduction to, types and functions for spanning of openings in building. Method of construction using various materials like stone slab, timber, metal, brick and stone masonry, concrete etc.

UNIT III:

Coping, dpc, plastering, guniting& cladding

Coping &dpc- Introduction to and use of coping & DPC in building using various materials.

Plastering – Types, preparation and application in interior & exterior, like i) mud ii) lime iii) cement iv) gypsum with different finishes.

Guniting& grouting– To fill in cracks, voids in masonry, concrete and for repairs.

Cladding – Using tiles such as clay, stone, decorative cement, etc. for walls & roof

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 End Semester Assessment (ESA)–

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

Mode of assessment : Portfolio .

Text Books - Nill

Reference Books:

McKay J.K Building Construction Metric Vol 1-4, 4th edi 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, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000

"Building Construction" by JanardhanJha, Khanna New-Delhi.

RangawalS.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 19th edi, 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.

Program : Architecture		
Course Title: GRAPHICS - I		**Course Code: 18AATC103**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6**
ISA: 50	**ESA: 50**	**Total Marks: 100**
Teaching Hours: 96	**Examination Duration: NA**	

UNIT I:

1: Introduction to the basic principles of drawing

Introduction to the basic principles of drawing, introduction to drawing equipments and their uses, sign conventions, Lettering and Dimensioning, Architectural Scale

2: Plane geometry – Lines, Angles, Curves and regular Polygons

Construction of triangles, quadrilaterals, curves and regular polygons

3: Solid Geometry – Points and Lines

Introduction to solid geometry, Orthographic projections of points and lines

4: Solid Geometry – Planes and Solids

Problems on Orthographic projections of planes and solids

UNIT II:

5: Three Dimensional Representation – Oblique, Axonometric & Isometric

Problems on Oblique, axonometric & Isometric projection of solids

6: Technical drawing

Simple floor plans, elevation, sections, of simple building.

UNIT III:

7: Architectural Detailing

Reading and representing building components details such as door frames fixing,chejja, plinth formation, steel joinery etc

Scheme for Internal semester assessment (ISA)

Regular Assignments, models.

Term work: Evaluation of Portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA) –

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

Mode of assessment : Portfolio.

Text Books:

Bhat N.D. and Panchal V.M, Engineering Drawing, Plane and solid geometry, Charotar Publishing house, Anand 2002.

Francis D.K. Ching, Architectural Graphics, 4th Edition, John Wiley & Son, New York

Program : Architecture		
Course Title: Skill Development Workshop- I		**Course Code: 18AATC104**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: NA**	

Course contents:

Unit-I:

Free hand and objects drawing: Observation and recording through free hand drawing by using various drawing and sketching tools like pencil, pen, charcoal crayons etc.

Architectural Model Making :Introduction to Basics of the Model making skills like cutting, pasting etc.

Unit-II

Architectural sketching: Drawing of human figures, vehicles, small buildings, furniture, simple and complex geometrical objects with an emphasis on the perception of details and expressing them in lines, colour texture etc.

Architectural ModelMaking: Introduction to Basics of the following associated skills to enhance and understand spatial, scale, material, and aesthetical requirements of design, construction and presentation.

Unit-III

PAINTING: Understanding of colour wheel, components , types of colour, colour schemes, value and intensity by using painting tools and materials like brushes, paper, water color, poster colouretc.

Sessional Work (Internal semester assessment)

Regular Assignments, Architectural sketches, drawings and models

Scheme for Semester End Assessment (ESA)

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

Mode of assessment: Portfolio/ Models.

References: Book: Robert Gill: Rendering with pen &ink, Thames & Hudson New York 1984. Robert Gill: Basic Rendering, Thames& Hudson New York 1991. John Chen: Architecture in pen & ink, McGraw-Hill Inc- USA 1995. Colin Saxton: Art School, Chart well Books IncNewJersey.

Program : Architecture		
Course Title: Prehistoric Architecture		**Course Code: 18AATC105**
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: 3Hours**	

Course contents:
Focuses on study of evolution of various styles of architecture, methods of construction and influence of art and culture on architecture.
Evolution of mankind-its impact – on primitive arts and crafts in various countries.
Evolution of shelter forms in different regions.
Growth of Human settlements and cultural influences.
Influence of religion and culture on domestic and civil architecture.

Unit-1
Pre-Historic world
Primitive man – Shelters, Settlements, religious and burial systems
Ex: Oval Hut, Nive, Dolmen Tomb, Gallery Grave, Passage Grave, Houses at CatalHuyuk, LepensikiVir settlements, stone Henge.

Unit-II
River valley cultures-
Study of political systems, concept of settlement, impact of climate, socio culture and their related shelter types, planning types, method of building structures and detailing. Study of building materials used.
Indus valley civilization-
Layout of Mohenjo-Daro, House Plans, Community well, Great Bath, Granary.
Egyptian-
Tombs, Pyramids, & Temples- Mastaba Tombs, Pyramid of Cheops, Temple of Khons, Karnak.

Unit-III
River Valley Cultures-
Tigris and Euphrates
Ziggurats at Warka, Ur and TchogaZanbil, Palace of Sargon, Mastaba Tombs.

Sessional Work (Internal semester assessment)
Students will be assessed by 2 theory minor exams of 20 marks each and 10 marks for sketch book submission.

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

References :

"History of Architecture in India "byTadgell Christopher.
Sir Banister Fletcher's "History of 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: Basic Design		**Course Code: 18AATC106**
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**	

Course contents:
To understand and interpret elements of design in Visual composition.
To develop creative skills to address design principles in Architecture.
To explore art forms and understand importance of art in architecture.

Unit-I:

Elements of Visual Composition: Understanding role of the following basic elements of visual design existing in paintings, compositions, murals, sculptures, building and in a nature – Dots, Lines, Planes, Patterns, Shapes, Forms, Spaces, Colour, Texture, Levels, Light, Fenestration's. Study of Textures and Textures Schemes.

Unit-II

Principles of Visual Compositions : To address design principles in architecture. Understanding and using principles like Repetition, Rhythm, Radiation, Focal point, Symmetry, Asymmetry, Background, Foreground, Sense of Direction, Harmony, Balance and Proportion.

Unit-III

EXPLORATION OF ART FORMS- study of traditional and contemporary art forms, relation between art and architecture from earliest times to present.

Sessional Work (Internal semester assessment)
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

Mode of assessment: Portfolio, Model .

References :

Robert Gill : Rendering with pen & ink , Thames & Hudson New York 1984
Robert Gill : Basic Rendering ,Thames & Hudson New York 1991
John Chen : Architecture in pen & ink, McGraw-Hill Inc- USA 1995
Colin Saxton : Art School, Chartwell Books Inc New Jersy.

Program : Architecture		
Course Title: Structures-I		**Course Code: 18AATC107**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**
ISA: 50	**ESA: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: 3 Hours.**	

UNIT I:

Evolution of Structures: Historical perspective and definition of structure as a device for channeling loads that result from the use or presence of the building in relation to ground.

Structural systems and its elements overview: Vertical/lateral systems: wall, cantilever, moment frame, braced frame, horizontal one-way and two-way systems: truss, arch, vault, dome, shell, cable stayed, suspended, membrane.

Experiment with Structures: Example-1: Build a structure using drawing sheet paper having three and four supports to carry a weight of 2 to 3 kg on it. Example-2: Make a column of height 30mm to carry a weight of 3kg. Example-3: Build a beam of span 450mm simply supported to carry a weight of 1kg at mid span.

Basic structural Materials: Qualities of building materials Mechanical properties of Structural materials: wood, masonry, steel, concrete, fabric; energy use and rupture length. Advantages and disadvantages of Structural Materials and choice of Structural Material for domestic buildings, Industrial buildings, Tall buildings and Long Span buildings.

Loads on Structures: Dead load (DL), live load (LL), static, dynamic, impact, and thermal loads. Principle of transmissibility of forces. Understanding load flow by tributary load and load path (slab, beam, and girder) and vertical members (post, wall, and footing); load path.

Sectional properties: Centroid, difference between centroid and centre of gravity, role of symmetry in locating centroid, moment of inertia, obtaining moment of inertia of unsymmetrical by applying parallel and perpendicular axis theorems.

UNIT II

Equilibrium of Forces: Force, characteristics of a force, Reaction, Moment of a force and Principle of Support conditions and their significance in resistance to forces and to maintain equilibrium.

Basic principles of mechanics: Tension, compression, shear, bending, torsion; symbols and notations; force and stress.

Stress/strain relations (Hooke's Law): Material response to applied loads, intensity of stress, strain and types. Stress strain diagrams for major building materials, Modulus of Elasticity, linear and non-linear materials, elastic, plastic, and elastic-plastic materials; Poisson's Ratio; Thermal stress and strain.

Graphic vector analysis: Resultant and equilibrant of coplanar, concurrent and non-concurrent force systems. Parallelogram, force polygon, resultant, equilibrant, components; numeric method.

UNIT III

Truss: Truss concept of triangulation, common truss configurations, innovative forms for truss of given span.

Truss loads and reactions: For a given configuration of the trusses and center to center spacing, calculations of the dead weight of the truss and the dead weight of the roof cover and support reaction loads analysis of simple trusses by method of joints..

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: Engg Mechanics by S.S.Bhavikatti III-edition .Vikas publications New Delhi.
Reference Books STRUCTURES - Martin Bechthold, Daniel L Schodek, and PHI Learning Private limited, Sixth Edition 2) Structure in Architecture, the building of buildings, by Mario Salvadori 3) Structure and Design, by G. G. Schierle 4) Engg Mechanics – R K Bansal & Sanjay Bansal, Laxmi publications, New Delhi, 3rd ed 5) Engg Mechanics, Ferdinand L Singer, Harper Collins publications, 3rd ed.

Scheme for Semester End Examination (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	1,2,3,4,5	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	6,7,8,9	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	10,11	Solve Any **1** out of **2**

II SEMESTER

Program : Architecture		
Course Title: ARCHITECTURAL DESIGN – II		Course Code: 18AATC108
L-S-P: 0-4-0	Credits: 4	Contact Hours: 6
ISA: 50	ESA: 50	Total Marks: 100
Teaching Hours: 96	Examination Duration: NA	

UNIT I:

Introduction to Design theory

Principles of architectural composition:

General principles like unity, Balance, Proportion, Scale, Contrast, Harmony, Accentuation, and Restraint. Repose, Vitality, Strength in the built environment

Underlying Ordering Principles Symmetry, hierarchy, datum, axis, scale and proportion rhythm in the built environment.

UNIT II

Introduction Multiuser/ public spaces

Defining and understanding various design aspects needed for multi /semipublic/public user spaces.

UNIT III:

Designing a multi user multi level room space.

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

The design issues to be addressed are

Multi user and multi level space formation

Integration of material and form.

Integrate the horizontal and vertical circulation.

Develop skills to correlate the materials and the resulting form.

Details pertaining to the disabled, aged people and children.

The tentative list of suggested projects to be covered as design problems: Architectural Exhibition / display spaces Multi level museum, academic spaces, kindergarten school, Recreational spaces fast food/ restaurant

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.

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,Reviws.

Text Books: NIL

Program: Architecture		
Course Title: BUILDING CONSTRUCTION & MATERIALS - II		**Course Code: 18AATC109**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 96	**Examination Duration: NA**	

UNIT I

Timber, bamboo & its products.

TIMBER- Introduction to, qualities of good timber used in building. Timber based products like **i) veneer, ii) plywood** iii) block board iv) chip / particle board v) fiber board (MDF) vi) Engineered timber, **finger-joint boards.** Introduction of bamboo and its products used in building.

TIMBER DOORS – Study of timber doors in building. Components of a door. Various types **& joinery details of** doors i.e. i) battened &ledged ii) battened, ledged & braced iii) framed & battened iv) framed **& paneled v) framed &** glazed. Flush doors using timber products & detailing there on. Study of fixtures used for doors.

UNIT II:

Timber windows

Study, types & construction details of glazed timber windows, i.e. i) casement ii) corner **iii) bay iv) dormer v)** clerestory vi) lantern vii) skylight viii) louvered etc. Components of window. Construction, joi**nery details, & study of** fixtures, for i) casement ii) bay & iii) louvered windows.

TIMBER ROOFS- Introduction to, evolution, classification & study of conventional timber roofs **for small to moderate** spans like i) flat (*madagi*) ii) Lean to iii) couple iv) collar beam v) king post vi) queen Post. **Construction & joinery** details for King post roof truss.

UNIT III:

Roofing materials, paints

Identifying & working out fixing details of various common roofing materials like i) clay tiles **ii) asbestos cement,** aluminium, galvanized iron, SS, profiled, PVC, polycarbonate sheets etc.

PAINTS- Study & use of paints, polishes and protective coatings, including preparation of **for new and old,** surfaces, of interior and exterior like: wood work, steel work, plastered work, exposed masonry **& cladding work etc**

Scheme for Internal semester assessment (ISA)
Regular Assignments, models.
Term work: Evaluation of Portfolio, assignments by internal examiner

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

Mode of assessment : Portfolio .

Text Books - Nill

Reference Books:

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

Program : Architecture		
Course Title: GRAPHICS - II		**Course Code: 18AATC110**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6**
ISA: 50	**ESA: 50**	**Total Marks: 100**
Teaching Hours: 96	**Examination Duration: NA**	

UNIT I:

Section of Solids - section of simple and composite objects.

Perspective View- Parallel and Angular perspective projection.

Principles and visual effects of three dimensional objects.

Study of picture plane, station point, vanishing point, eye level, ground level etc., their variation and their resultant effects.

UNIT II:

Perspective view drawings of simple geometrical forms by office method and by measuring point method

Sciography - Introduction of basic principles of sciography and its application to the field of architecture. Sciography of line and plane in plan and elevation.

Sciography of three dimensional objects in perspectiveviews.

UNIT II

Perspective drawing including (one point & two point) of building exteriors including rendering.

Perspective drawing including (one point & two point) of building interiors including rendering.

Scheme for Internal semester assessment (ISA)

Regular Assignments, models.

Term work: Evaluation of Portfolio, assignments by internal examiner

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:

Perspective Drawing, Shah Patki Kale
Geometrical Drawing for Art students, I H Morris,
Engineering Drawing, Prof, VeeEss, MSRIT, V.K.Publishers, BNG-10,1990
Basic Perspective" by Robert Gill, Rendering with Pen & Ink by Robert Gill.
"Perspective and Sciography" by S.H.Mullik.
Perspective for Interior Desingners by John Pile.
Applied perspective by John Holmes.
Building Drawing by M.G.Shah, C.M.Kale&S.Y.Patki

Program : Architecture		
Course Title: HISTORY OF ARCHITECTURE - I		**Course Code: 18AATC111**
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:

Pre-Classical Architecture – Persian, Mycenaean, Etruscan

Characteristics, The Palace of Persepolis, The Palace Tiryns, The Temple of Juno Sospita, Lanuvium.

Greek Architecture

Characteristics, Orders of Greek, The Acropolis: Athens, Parthenon, Theatres and Temples

Unit-II

Roman Architecture

Characteristics, Orders , Colosseum, Pantheon, Forums, Temples, Theatres, Amphitheaters, andAqueducts

Early Christian Architecture & Byzantine Architecture

Characteristics, Basilicachurches , St Peter's Church Rome, Evolution of Byzantine Churches, Hagia Sophia

Unit-III

Romanesque Architecture

New Construction Methods, Pisa Cathedral, The Abbey Church, Cluny

Gothic Architecture

Cathedrals, Gothic Churches with construction of pointed arch, Rose windows, etc.

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

References :

Sir Banister Fletcher - History of Architecture

F.D K Ching, Mark Jarzombek and Vikramaditya Prakash – A Global History of 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: Skill Development Workshop- II		**Course Code: 18AATC112**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: NA**	

Course contents:

Unit-I:

Allied skills for Architecture

Tools and materials

Hands-on working of advance model making and working tools. Various types of materials used **for making scaled** models, sculpting etc. (Paper, card sheet, mount board, Art card, foam, metal, plaster, clay, wa**x glass, vegetables** etc.) Methods of cutting, joining, texture development, glue welding and joinery.

Unit-II

Introduction to Architectural rendering skill and mobile photography, Soft skills

1. Hands on rendering of Architectural plan, elevation and sections.
2. Hands on mobile photography of models, buildings, furniture, vehicles etc.
3. Soft skills like communication, speaking, reading & writing.

Unit-III

1. Introduction to scanning of rendered sheets
2. Introduction to Adobe Photoshop software for photo processing and composition
3. Using above skills create own imaginative forms or objects

Sessional Work (Internal semester assessment)

Regular Assignments, Architectural models, rendered sheets and photos

Scheme for Semester End Assessment (ESA)

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

Mode of assessment: Portfolio / Model

References :

Robert Gill : Rendering with pen & ink , Thames & Hudson New York 1984

Robert Gill : Basic Rendering ,Thames & Hudson New York 1991

John Chen : Architecture in pen & ink, McGraw-Hill Inc- USA 1995

Colin Saxton : Art School, Chartwell Books Inc New Jersy.

Program : Architecture		
Course Title: Digital Tool –I (CAD)		Course Code: 18AATP101
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	

UNIT I:

Introduction to CAD Environment: Introduction to The world space, user co-ordinate system (ucs). Command line and menus, to learn basic commands like, units, limits, line, circle, arc. Etc. Use editing commands like trim, extend, erase, and offset to create basic shapes.

Unit-II

2D Drafting: Use basic drawing and editing commands to create 2d architectural plans, elevations, and sections, adding text and dimensions creating layers using advance editing commands.

Unit-III

Composing and printing: Creating detail sanction drawings, using plot for output, saving drawings in different file formats. Creating 2d drawings from Google earth and importing images in cad.

Sessional Work (Internal semester assessment)

Students will be assessed by 2 theory minor exams of 15 marks each and 20 marks for portfolio submission.

Scheme for Semester End 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 .

References :

AutoCAD 2007 for Dummies. By David Byrnes, Mark Middle brook.

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

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

2.)Enhancing CAD Drawings with Photoshop by Scott On Stott

Publisher: Sybex (January 21, 2005) Language: English

ISBN-10: 0782143865 ISBN-13: 978-0782143867

Program : Architecture		
Course Title: Structures - II		**Course Code: 18AATC114**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**
ISA: 50	**ESA: 50**	**Total Marks: 100**
Teaching Hours: 48	**ExaminationDuration:3 Hours**	

Unit I

1. **Determinate and indeterminate structures:** Difference between determinate and indeterminate structures, implication of indeterminacy, obtaining the redundancy of beams and frames.
2. **Bending moment and shear force:** Concept of shear force and bending moment, types of beams, concept of concentrated load, uniformly distributed load, uniformly varying load and couple. Construction of SFD and BMD for simple cases of cantilever and simply supported beams. Bending moment and shear force diagrams for two and three span continuous beams.
3. **Stresses in beams:** Concept of pure or simple bending, bending equation, section modulus and moment of resistance, obtaining bending stress distribution for simple cases of beams. Shear stress distribution across the symmetrical and unsymmetrical beam cross sections.

Unit II

4. **Deflection of beams:** Relation between deflection, bending moment, shear force and rate of loading, deflection equation, obtaining slope and deflections for cantilever and simply supported beams using standard formulae.
5. **Torsion in structures:** Concept of torsion, torsion equation, elements subjected to torsion in structural system.

Unit III

6. **Columns and struts:** short and long columns, buckling of column, boundary conditions for columns, effective length, slenderness ratio and critical load. Euler's and Rankine's theories.

REFERENCES:

1) Structures - Martin Bechthold, Daniel L Schodek, and PHI Learning Private limited, Sixth Edition 2) Structure in Architecture, the building of buildings, by Mario Salvadori 3) Structure and Design, by G. G. Schierle 4) Engg Mechanics – R K Bansal & Sanjay Bansal, Laxmi publications, New Delhi.

Scheme for Internal semester assessment (ISA)

Regular Assignments

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment : Portfolio& Theory Exam.

Scheme for Semester End Examination (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	1,2,3,4,5	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	6,7,8,9	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	10,11	Solve Any **1** out of **2**

Program : Architecture		
Course Title: Surveying		**Course Code: 18AATC113**
L-S-P: 2-0-0	**Credits: 02**	**Contact Hours: 02**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: 3 Hours**	

UNIT I:

Surveying- definition, scope of surveying, applications of surveying in architecture **projects, principles,** classification and character of work. Shrunken scale. Direct and reciprocal ranging**, offsets types. Basic** problems in chaining, well-conditioned triangle and chain triangulation. Errors in chain **surveying.**

Principles of plane table surveying, accessories and methods of plain tabling. Merits **and demerits of plane** table survey as compared to chain survey.

UNIT II:

Leveling, terms used, instruments, classification of leveling, Temporary adjustments of **dumpy level. Plane** of collimation and rise and fall methods. Booking and reduction of levels related numeri**cal on the topics. and** errors in leveling. .

Introduction to contouring, definitions contour interval, factors affecting contour inter**val. Characteristics of** contours, location of contours, direct and indirect methods of contouring, inter**polation of contours.** Application of contour maps in architecture field.

UNIT III:

Introduction to Theodolite temporary adjustments and field work.

Introduction to Geographical Information systems and Total station.

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:

B.C. Punmia, Surveying and Levelling, Vol-IChirator Publications.

Kanetkar T. P. and Kulkarni S.V, Surveying and Levelling Part-

Reference Books: Duggal, Surveying and Levelling. Vol-I