तार : विश्वविद्यालय
Gram : UNIVERSITY

टेलीफोन : कार्या0 : 2320496
कुलसचिव : निवास : 2321214
फैक्स : 0510 : 2321667

बुन्देलखण्ड विश्वविद्यालय, झाँसी
BUNDELKHAND UNIVERSITY, JHANSI

झाँसी (उ.प्र.) 284128

संदर्भ बु.वि./ई के./2020/5187-5195

दिनाँक 28/08/2020

Institute of Architecture & Town Planning
Dispatch No. BU/ITP/ 21
Date : 28 / 8 / 2020

The Minutes of Meeting of BOS

In reference to the BOS of department of ARCHITECTURE ...., Institute of ARCHITECTURE & TOWN PLANNING ..... held on 22 & 23/02/2020 regarding the revision of syllabus in tune with CBCS/~~NEP-2020~~ and subsequent approval from Academic Council. This is to certify that the syllabus is 100% revised.

Registrar
Bundelkhand University
JHANSI

HOD/Coordinator

Institute of Architecture & Town Planning
JHANSI
Bundelkhand University

INSTITUTE OF ARCHITECTURE & TOWN PLANNING

Proceedings of the Meeting of the Board of Studies for B.Arch. 05 Year Full time Course

Meeting of the Board of Studies convened on 22nd & 23rd February, 2020 for the approval of syllabus and ordinance of the department along with list of paper setters and guest faculties.

Following members are present in the meeting

1. Dr. R.K. Pandit (Chair & External Expert)
2. Prof K.K. Dixit (External Expert)
3. Prof Mohit Kumar Agrawal (External Expert)
4. Prof M.S. Khan (Advisor & Internal Expert)
5. Prof Neeraj Gupta (Professor and Internal Expert)
6. Ar. Sandeep Kumar Mishra (HOD & Internal Expert)
7. Ar. Raina Garg (Associate Professor & Internal Expert)

Following suggestions and Changes are recommended with reference to the last meeting held on 18th & 19th March, 2017.

1. The minutes of meeting of internal BOS Members on 31/01/2020 were approved anonymously with the corrections as pointed out and typing error in the page III and IV of the ordinance, which has been incorporated in the New and old ordinance.
2. As per COA Letter No. CA/1/2018/council Circular Oct. 31, 2018, minimum standard the practical training shall be for a period of one Semester 15-18 working weeks in the 8/9th semester of the B.Arch. Programme. Keeping in view the above circular the training programme has been kept in 8TH Semester for 16-18 weeks and thesis design project in 10th semester which has also been incorporated in syllabus and ordinance and approved by BOS.
3. Subjects of the 9th semester has been revised and new subjects has been introduced as per COA norms as detailed below:
    a. Architectural Design VIII
    b. Building Construction V
    c. Acoustics & illumination
    d. Landscape Design
    e. Energy efficient Buildings
    f. Elective -II
4. As per the New Ninth semester subjects introduced grades has also been revised, keeping the overall credits of the semester will be same.
5. Revised Ordinance is annexed as 01.
6. List of paper setters recommended and submitted to Hon'ble Vice Chancellor and VIVA – VOCE Experts as annexed as 02.
7. List of External Experts (Guest/Experts/Visiting faculty) as proposed annexed as 03.
8. List of Subjects/External Experts annexed as 04

Dr. R.K. Pandit

Prof K.K. Dixit

Prof Mohit Kumar Agrawal

Prof M.S. Khan

Prof Neeraj Gupta

Ar. Sandeep Kumar Mishra

Ar. Raina Garg

INSTITUTE OF ARCHITECTURE & TOWN PLANNING

Proceedings of the Meeting of the Board of Studies for B.Arch 05 Year Full time Course

Meeting of the Board of Studies conved on 18th & 19th March, 2017 for the approval of syllabus and ordinance of the department along with list of paper setters and guest faculties.

Following members are present in the meeting

1. Dr. R.K. Pandit (Chair & External Expert) 18.3.17.
2. Prof K.K. Dixit (External Expert) 18/3/17
3. Prof M.S. Khan (Advisor & Internal Expert) 18/03/17
4. Prof Neeraj Gupta (HOD & Internal Expert) 18/03/17
5. Ar. Sandeep Kumar Mishra (Associate Professor & Internal Expert)
6. Ar. Dharmesh Juremalani (Associate Professor & Internal Expert)
7. Ar. Raina Garg (Associate Professor & Internal Expert) 18/03/2017

INSTITUTE OF ARCHITECTURE AND TOWN PLANNING,
BUNDELKHAND UNIVERSITY,
JHANSI (UTTAR PRADESH)

BACHELOR OF ARCHITECTURE

Program Outcomes

Program Specific

OutcomesCourse

Outcomes

BACHELOR OF ARCHITECTURE

PROGRAMME OUTCOMES (POs)

PO1: Understand the real-life situation in architectural practice and recognize the dialectic relationship between people and the built environment (especially with reference to the Indian sub-continent) with reference to their needs, values, behavioral norms, and social patterns.

PO2: Work collaboratively toward synthetic design resolution which integrates an understanding of the requirements, contextual and environmental connections, technological systems and historical meaning with responsible approach to environmental, historical and cultural conservation.

PO3: Apply visual and verbal communication skills at various stages of the design and delivery process.

PO4: Thrive in a rigorous intellectual climate which promotes inquiry through design research.

PO5: Produce professional quality graphic presentations and technical drawings/documents.

PO6: Critically analyze building designs and conduct post-occupancy evaluations.

PO7: Work in a manner that is consistent with the accepted professional standards and ethical responsibilities.

PO8: Work in collaboration with and as an integral member of multi-disciplinary/interdisciplinary designand execution teams in the building industry.

PO9: Conduct independent and directed research to gather information related to the problems inarchitecture and allied fields.

PO10: Students able to work effectively in a multi-disciplinary/inter-disciplinary team in the building industry, by providing 360o knowledge of architecture.

PROGRAM SPECIFIC OUTCOMES (PSOS)

PSO1: Demonstrate critical thinking through a self-reflective process of conceptualization and design thinking that is open to consideration of alternative perspectives by analyzing, evaluating, and synthesizing ideas and information gathered through applied research grounded in information literacy.

PSO2: Implement complex two and three-dimensional graphic representation techniques using a wide variety of traditional and digital media, to reflect on and explain the architectural design processto a wide range of stakeholders.

PSO3: The knowledge and ability to apply a design decision-making process through appropriate technical documentation in a manner that is client-centered, sustainable, aesthetic, cost effective, and socially responsible.

PSO4: Incorporate a wide range of technical skills and professional architectural knowledge during schematic design to demonstrate a comprehensive application of life safety,

accessibility, and sustainability issues in making sound design decisions across varying scales and levels of complexity.

PSO5: Demonstrate the ability to synthesize a wide range of variables into an integrated design solution by employing appropriate building materials, building systems, and construction practices grounded in environmental stewardship and based on sound research and design decisions across varying scales of systems and levels of complexity.

PSO6: Understanding how to collaboratively lead teams of stakeholders in the process of conceiving, developing and implementing solutions to problems in the built and natural environments, utilizing knowledge of the diverse forms and the dimensions of professional practice along with associated ethical, legal, financial and social responsibilities.

PSO7: Apply math, physics, logic as reasoning skills to investigate problems related to force resolution in structural systems, thermal heat gain and loss in buildings, material quantity estimates, budget management, and life-cycle cost analysis.

PSO8: Demonstrate information literacy through applied research by raising clear and precise questions, using abstract ideas to clarify and express information, and considering diverse points of view, to reach well-reasoned conclusions and evaluate options against relevant design criteria, building standards, and program requirements.

COURSE OUTCOMES

ARCHITECTURAL DESIGN–

CO1: Enhanced ability to integrate aspects such as climate, building material & construction, andprinciples of visual arts into architectural design.

CO2: Understanding of small structure measure

drawings.CO3: Understanding of aesthetical

terms.

CO4: Enhanced ability to integrate aspects such as climate, building material & construction, andprinciples of visual arts into architectural design.

CO5: Learnt how to work with existing building with new

technologies.CO6: Understanding of space arrangement

according to function.

CO7: Design climate, site and topography responsive

buildings.CO8: Design according to the context of

vernacular architecture

CO9: Come up with a design process and solution for simple public buildings

CO10: Design for multiple groups of users with due consideration to site, climate, services,

bye-laws.CO11: Understand the relationship between design and urban setting.

CO12: Derive a design process and design solution for a public building.

CO13: Ability to Design, analyse and generate creative alternatives for moderately complexArchitectural Design issues.

CO14: Design a large campus for a specific purpose for a large population of multiple groups of users.CO15: Produce a design process and a design solution to an urban design problem.

BUILDING CONSTRUCTION-

CO1: Construction details of foundationsCO2: Details of footings

CO3: Knowledge of steel structure

CO4: Understanding of different structural member and their application.CO5: Use of different material according to their location and space.

CO6: Knowledge of pre cast construction and its use.

CO7: Development of construction technology and innovative techniques as tools to address demand tomass construction.

CO8: Knowledge of disaster resistant construction.

CO9: Knowledge of long span steel structure techniques.

WORKING DRAWINGS -

CO1: Imparts enough skill to prepare working drawings for the ease of construction with properworkmanship assurance in accordance with the specifications and the contract document and tothe satisfaction of the Architect.

CO2: Implementation of drawings on site.

CO3: Working process and time management of work on site.

HISTORY OF ARCHITECTURE –

CO1: A sound knowledge base of the processes and events that shaped the architecture of the present. Development of critical analysis of the contributing factors and an overview of the issues facing the contemporary world.

CO2: Understanding of different type of civilization and their architecture styleCO3: Understanding of architectural elements and principles.

CO4: Understand the difference between history through time period.

CO5: Knowledge about different architectural elements of different time period's construction

style andconstruction techniques.

CO6: Knowledge of different design pattern and philosophy of architect in these periods.

GRAPHICS (COMPUTER APPLICATION)-

CO1: The implementation of 3d software's for

architectural design.CO2: Uses and application of

different building material.

CO3: Learnt and improvement of visualization of colours and space.

CONSTRUCTION MATERIALS–

CO1: How to apply the different materials to make a building comfortable and aesthetically

appearing.CO2: To apply the fire safety techniques in their designs.

CO3: To understand what are the different stages of applications of DPC and various materials toprotect building from external environment.

CO4: Knowledge of various building

materials.CO5: Application of new

technology

CO6: Learnt how to celebrate new technology with old construction and techniques.

EDUCATIONAL TOUR -

CO1: Effective

learning CO2:

Personal

Development

CO3: Deepen social and architectural

knowledgeCO4: Enhances Perspective

BUILDING SERVICES-

CO1: Conceptual understanding about the process & systems with installation of equipment's related tothe services identified.

CO2: Learnt Sanitary system of buildings.

CO3: Learnt Planning and design for disposal of urban/rural effluent

CO4: Interact technically with electrical and illumination

experts CO5: Design efficient electrical layouts with their

circuit diagrams

CO6: Design efficient illumination levels for various activities and spaces.

CO7: A fair understanding of space requirements and distribution of electrical service

provisions.CO8: The understanding of lighting principles and different electric light sources available.

CO9: To inculcate a fair understanding of integration of various mechanical systems and services.CO10: Implication on architectural space design and facilitation.

CO11: Application and importance of psychometric chart in planning.

STRUCTURES –

CO1: Knowledge of different types of loads, moments, stress and calculationsCO2: Knowledge of different types of column and beam design

CO3: Knowledge of section modules.

CO4: Design RCC structural members likes beams, slabs etc.CO5: Design RCC combined and eccentric footings.

CO6: Design RCC structures...

CO7: To learn structural system and its use in buildings.

CO8: Understanding of advance Frame structures applications in buildings.

CO9: Learnt how to calculate the load for different type of structures for designing.

CO10: To learn structural system and its use in buildings.

CO11: Understanding of STEEL structures applications in buildings.CO12: Understanding of designing of structural members.

SURVEYING-

CO1: Interact technically with surveyors

CO2: Be able to prepare and interpret survey drawingsCO3: Gain a broad understanding of Land Survey

CO4: Get accustoms with the angular and linear measurements

CO5: Trained with recording the field information and necessary plotCO6: Contemporary issues and developments.

SPECIFICATION/ ESTIMATING & COSTING -

CO1: Write specifications for building construction. CO2: Prepare approximate estimates of building projectsCO3:

Prepare detailed estimates for a building project.

TOWN PLANNING -

CO1: Distinct understanding of regulated urban development in cities.

CO2: The course shall develop understanding about the emergence of human settlements on the basis ofcomplex interaction of determinants, elements and principles over time.

CO3: Knowledge and use of resources of space utilization according to population generation.

DISSERTATION-

CO1: Systematically abstract, analyse, synthesize and interpret existing literature.

CO2: Develops a specialized knowledge in a subject area which maybe an extension to the prescribedcoursework.

CO3: Builds his his/her capacity to work independently and methodically in a variety of intellectuallydemanding contexts.

ENERGY EFFICIENT BUILDINGS -

CO1: Development of energy conscious architectural design, strategies and

built forms.CO2: Futuristic vision of urban habitat.

CO3: Understanding of the concept of green building design.

PROFESSIONAL PRACTICE -

CO1: To acquaint students with their roles and responsibilities of dealing with various related agenciesand the freedom/ limitations as a professional as well as their real status in the society.

CO2: Learns how to setup and run office

CO3: Learnt the payment schedule, architectural services schedule, different MEP services consultantswork.

CO4: Need and Role of Arbitrator.

URBAN DESIGN -

CO1: To understand the general morphology of urban

space. CO2: Be able to interpret the urban forms of the

past and present.

CO3: Demonstrate an understanding of the various bio-physical, historical, political-economic, and social-cultural layers of the city, and work with these to form a consciously designed intervention.

CO4: Synthesise general theoretical models, analytical approaches to urban issues and contexts, technical knowledges, stakeholder interests and ethical frameworks, and individual vision into an integrated urban design proposition

CO5: Articulate their stance and position as a designer within discourses of urbanism.

CO6: Research and analyse information relevant to developing urban design interventions andpropositions.

CO7: Demonstrate high quality communication, representation and visual skills appropriate to urbandesign projects, including written, verbal, graphical and model-based presentation

CO8: Demonstrate abilities in teamwork and time management for group and individual work.

LANDSCAPE DESIGN-

CO1: Landscape design process and information needed to make space visually and psychologically.CO2: Understanding the design philosophy behind of history of landscape architecture,

CO3: To learn about the variety of trees and plants. The benefits we get from planning them in differentconditions.

THESIS PROJECT -

CO1: To use all the skills acquired in the duration of preceding academic courses.

CO2: Methodically self-direct effort by choosing the project of choice, builds capacity to work independently and methodically in a variety of intellectually and professionally demanding contexts.

CO3: Learn to make an original and individual, creative contribution to the academic discipline and/or the professional field in some cases.

PRACTICAL TRAINING-

CO1: Implementation of College Learning on site.

CO2: Learning Professional Skills.

CO3: Market Research.

CO4: Office Management.

INSTITUTE OF ARCHITECTURE & TOWN PLANNING, BUNDELKHAND UNIVERSITY, JHANSI-284128 (INDIA)

FIRST YEAR - FIRST SEMESTER

SEMESTER – I

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST/ Quiz Assignment	Total theory block			End Sem	Term work/ Sessional/ Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	**TB-1711 PB- 10716**	Design-I	3	7	10	100	50	**150**	03	06	50	100	**150**	**300**	07	10

AIM: The aim of the subject is to introduce to the students the design fundamentals, design vocabulary and order of form and space.

Course Content:

Unit – I

- Primary elements: Point, line, plane, volumetric elements.
- Form: Properties of form (two dimensional) primary solids, variations in forms.

Unit II

- Surface articulation including importance of color theories, textures and relationship.
- Form and space: Space defining elements, organization of form and space.

Unit III

- Circulation elements, proportion and scale, ordering principles.
- Application of these above to two and three dimensional compositions.

Unit IV

- Indoor and outdoor sketching exercises to develop the skill and understanding of shades, shadows etc. in the nature and man-made objects with the use of different models.
- Study through models of different materials viz paper, clay wax, soap, wires etc.

Unit V

- The idea is to learn mass and space handling with importance of form, colour and texture.

Minimum one time problem of 6 hours duration is to be conducted in class other than regular design problems.

Note: The sessionals shall be in the form of drawings, and models along with report. The evaluation will be through review system presented before the Jury.

LIST OF TEXT AND REFERENCE BOOKS:

1711 DESIGN-I

1. FRANCIS D.K. CHING, “Form, Space and Order”, Van Nosttrand Reinhold Co. Canada.
2. FRANCIS D.K. CHING, “Architectural Graphics”.
3. National Building Code
4. D.E. CHIRAIRA & CALLENDAR, “Times Saver Standard for Building Types”
5. Neufert Data Standards Ernst Neufert Archon Books
6. MAITLAND, GRAVES, “The Art of Color in Design”, McGraw Hill Book Co. 1951.
7. Rendering with pen and ink by Gill, Robert
8. EDWARD D. MILLS, “Planning, the Architects Handbook”, Butterworth, London 1905.

9. Architecture: Scale and proportion by Eugene Ruskin
10. Architectural Graphic Standard by Ramsay and Sleeper.
11. V.S. PARMAR, “Design Fundamentals in Architecture”, Somayya Publications Pvt. New Delhi 1973.
12. SCOTT. “Design Fundamentals”
13. G. BROND BENT, “Design in Architecture”
14. Architectural Rendering the techniques of contemporary presentation by Albert o Halse
15. Building Drawing Shah, Kale, Patki Tata Mcgraw Hill Publishing
16. Meaning of Art: Herbert Read by Faber & Faber
17. Art & Visual Perception by Rudocy Arhhim
18. Art in everday life by Hetta Gol’stir
19. Towards New Architecture by Le Corbusier
20. Lateral thinking by Edward De Bono

INSTITUTE OF ARCHITECTURE & TOWN PLANNING, BUNDELKHAND UNIVERSITY, JHANSI-284128 (INDIA)

FIRST YEAR - FIRST SEMESTER

SEMESTER – I

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST/ Quiz Assignment	Total theory block			End Sem	Term work/ Sessional/ Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
2	**TB-1712 PB- 10717**	Graphics- I	3	7	10	100	50	**150**	03	06	50	100	**150**	**300**	07	10

AIM: The aim of the subject is to introduce the students about the fundamentals of visualization and preparation of architectural drawings.

Course Contents:

Unit I

- Understanding tools and techniques of drawing simple geometric objects.

Unit II

- Graphics basics: Hatching, Lettering, Dimensioning and Scale.
- Free hand drawing: Techniques and principles of free hand drawing through sketching various elements of nature and manmade objects through various mediums like pencil, pen and ink and color etc.

Unit III

- Graphic codes and symbols for various building elements, Architectural lettering.
- Scales: Construction of architectural scales and their application to real objects and drawings.

Unit IV

- Orthographic Projections: From simple point line to simple regular solids to complex solids or hollow objects /geometric objects.
- Complex Projections: Interpenetration of solids, development of surfaces with or without sections and intersection of solids.

Unit V

- Angular Projections: Isometric, axonometric and oblique projections.

Note: The sessional is to be done in the form of drawing sheets and sketches on above topics.

LIST OF TEXT AND REFERENCE BOOKS:

1712-GRAPHICS-I

1. N.D. BHATT, “Engineering Drawing”, Charotar Publishing house.
2. NARAYANAN, “Engineering Drawing”.
3. I.H. MORRIS, “Geometrical Drawing”. Orient Longman.
4. Architectural Rendering the techniques of contemporary presentation by Albert o Halse
5. Building Drawing by Shah, Kale, Patki Tata Mcgraw Hill Publishing, Latest
6. A Visual Dictionary of Architecture- Fransis D K Ching
7. Engineering Drawing Vol I and II by KR Gopalkrishna
8. MAITLAND, GRAVES, “The Art of Color in Design”, McGraw Hill Book Co. 1951
9. Architectural Graphics – Fransis D K Ching
10. Drawing a creative process- Frank Ching

11. Free Hand Drawing & Self Taught by Arthur Guptill
12. Pencil Sketching by Thomas Waug.
13. Drawing & Painting Course by Hashmi A.H.
14. Ways of Seeing by Berger, John

INSTITUTE OF ARCHITECTURE & TOWN PLANNING, BUNDELKHAND UNIVERSITY, JHANSI-284128 (INDIA)

FIRST YEAR - FIRST SEMESTER

SEMESTER – I

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST/ Quiz Assignment	Total theory block			End Sem	Term work/ Sessional/ Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
3	**TB-1713 PB- 10718**	Material Science	4	1	05	50	30	**80**	04	03	-	30	**30**	**110**	01	05

AIM: The subject has been designed to impart the knowledge about the traditional natural materials and the proprietary manufactured materials along with their characteristics, manufacturing process and appropriate use as building components and related specifications so that the students can use these materials appropriately.

Course Content:

Unit I

- Clay and clay products (bricks, tiles), stones.
- Cement, lime, sand, aggregate mortar and concrete blocks.

Unit II

- Timber types, qualities and defects in timber seasoning etc. complete.
- Metals- ferrous and non ferrous, glass.

Unit III

- Especial functional need and category of building materials abrasives, adhesives, asbestos, asphalt, bitumen, cork, electrical insulators, fuels, gypsum, heat insulation materials, lubricants, rubber sheets, roof coverings, solders, sound absorb materials, tar, turpentine etc.
- Proprietary building materials:- Paints, Varnishes, distempers wall paper, floor coverings, tiles, vinyl's, polyesters, fittings, furnishing materials for interiors & exteriors polymers, plastics resins and advanced surface finishes for interior and exterior etc.
- Processed materials- plywood, laminates, fiberboards, light weight boards, panels etc. & clay products.

Unit IV

- Prefabricated and pre-stressed building component: roof slabs, wall units, beams, columns, lintels, shelve etc. of different types, their specification & technique of construction and use in architecture.
- Low-cost construction techniques and materials, combinations in mud, terra - cotta, bamboo construction etc. Termite protection, sewage protection, fire protection materials etc. of special need.
  Industrial, agricultural and mineral wastes and their utilization as building materials: Fly ash, blast furnace slag, calcium carbonate, lime kiln rejects, by-product, gypsum, red mud, throw-away packages, rice husk, saw dust, wooden chips, choir waste, wood wool, tailings etc.
- Their application in components of different types of buildings.

Unit V

- Analytical, evaluative comparative and selective techniques for finalising specific building materials for different types of buildings and its influence on prevailing architectural styles.

Note: Sessional should be in the form of small reports, market surveys, seminars and notes on above mentioned topics. The works of CBRI, NBO, HUDCO and other related institutions be referred and discussed.

LIST OF TEXT AND REFERENCE BOOKS:

1713 Material Science

1. "Advances in Building Materials and Construction", CBRI.
2. "Specification Year Book".
3. S.C. RANGWALA, " Engineering Materials", Charotar Publishing House.
4. Fundamentals of Building Construction by Allen Edward
5. Construction Materials – Their Nature and Behavior – J M Illston
6. Handbook of Architectural Technology by Cowan Henry J
7. Building Material by Varghese
8. Building Material by S K Duggal
9. Building Material by Saiful Ismail
10. Soil Mechanics by B C Punamia

SEMESTER – I

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block			End Sem	Term work/ Sessional Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
4	**TB-1714 PB- 10719**	Humanities	3	1	04	50	30	**80**	03	03	-	30	**30**	**110**	01	04

AIM: The aim of the subject is to introduce the students about the various type of infrastructure terminology, writing and expression techniques.

Course Contents:

HUMANITIES

Unit I

- Grammar- Tenses, Types of sentences, clause analysis, reported speech, models, punctuation with emphasis on spoken expression with proper language command.
- Precise, essay and paragraph writing.

Unit II

- Technical report and letter writing.
- Aesthetic and critical writing.

Unit III

- Communication skills in architecture through write up and graphics, graphs, sketches audio presentation supplemented by drawings, transparencies, photographs, epidiascope, slides, video presentation, script writing dubbing, queue sheet, ending vision mixing.

SOCIOLOGY

Unit IV

- Introduction: Man, his social and physical environment, social groups and social structure and problems, cultural heritage, rituals and community gatherings etc.

Unit V

- Urbanisation: Trends and characteristics, dynamics of urban growth and social changes, urban attitudes, values and behavior, review of commission's report etc.

Note: Sessional work shall include assignments/tests on the above related topics.

LIST OF TEXT AND REFERENCE BOOKS:

1714 HUMANITIES

1. WREN & MARTIN, "English Grammar".
2. KRISHNA MOHAN, "Developing Communication Skills" Macmillan India Ltd.
3. Essential English Grammer with Answers – Raymond Murphy
4. English Grammer Rules and Usage- Annie Bhindra
5. Practical English Grammer A J Thomson
6. MACIVER & PAGE, "Society".
7. K.DAVIS, "Human Society".

8. A. R. DESIA, "Introduction to rural sociology in India".
9. E.E. BERGAL, "Urban Sociology".
10. "Sociology" – Anthony Giddens and Philip Sutton
11. Fainstein, Susan, and Scott Campbell. *Readings in Urban Theory*. Malden, MA: Blackwell Publishing Limited, 2002..
12. Legates, Richard, and Frederick Stout. *The City Reader*. New York, NY: Routledge, 2007. ISBN: 9780415770842.
13. Merrifield, Andy. *Metromarxism: A Marxist Tale of the City*. New York, NY: Routledge, 2002. ISBN: 9780415933490.
14. DeFilippis, James. *Unmaking Goliath: Community Control in the Face of Global Capital*. New York, NY: Routledge, 2003, pp. 17-60. ISBN: 9780415945257.
15. King, Anthony D. *Global Cities: Post-imperialism and the Internationalization of London*. New York, NY: Routledge, 1991. ISBN: 9780415062411

FIRST YEAR - FIRST SEMESTER

SEMESTER – I

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block			End Sem	Term work/ Sessional Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
5	**TB-1715 PB- 10720**	Structure-I	4	1	05	50	30	**80**	04	03	-	30	**30**	**110**	01	05

AIM: The aim of the subject is to introduce the students about the fundamentals of stability of any built structure and various factors of structure designing.

Course Content:

Unit 1

1.Statics of a particle, composition and resolution of forces, moment of a force, parallel forces, couples, general conditions of equilibrium.

Unit II

2. Center of gravity and moment of inertia of composition and cut out sections, parallel and perpendicular axes theorem, stability of equilibrium.

Unit III

3. Simple stresses and strains, direct stresses, compound stresses.

Unit IV

4. Shear force and bending moments for strained beams subjected to concentrated load and distributed loadings (Simply supported and cantilever only) support reactions.

Unit V

5. Stress in beams: Direct, bending and shearing stress in beams.

Note: Sessional work should include design and analysis of simple elements as stated above with drawings.

LIST OF TEXT AND REFERENCE BOOKS:

1715 -STRUCTURE-I

1. S.B. JUNNARKAR, “Applied Mechanics”, Charotar Publications Ananad.
2. RAMAMURTHAM, “Applied Mechanics”, Dhanpat Rai & Sons.
3. S.B. JUNNARKAR/H.J. SHAH, “Mechanics of Structure Vol.1”, Charotar Pub.
4. DR. B.C. PUNAMIA, “Strength of Materials”, Laxmi Pub.
5. Vector mechanics for engineers- statics by Bear & Johnston
6. Engineering Mechanics, statics & Dynamics by Desai & Mistry
7. Seeking structure from nature by Jeffery Cook

8. Strength of Material – RK Bansal, Laxmi Publications, New Delhi, Third Edition
9. Application Mechanics and Strength of Materials by IB Prasad
10. A text book on applied mechanics – R S Kurmi

FIRST YEAR - FIRST SEMESTER

SEMESTER – I

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block			End Sem	Term work/ Sessional Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
6	**TB-PB- 10721**	Workshop I	0	02	02	-	- -	**-**		-	50	20 -	**70**	**70**	02	02

WORKSHOP:

The aim of the subject is to introduce to the students to the various tools used in carpentry, metal work, masonry painting etc. and get a reasonable skill in handling the materials and tools there off.

Unit I

1. BRICKS: Bonds, ends and junctions, attached or detached pier, jointing, pointing, cavity walls.

2. STONE: Types and dressing, walling and joints, facing of brick or stone or brick work.

Unit II

3. CARPENTARY: Understanding the structure of timber, varieties of Indian timber, commercial boards, handling different carpentry tools, carpentry process, carpentry joints and wood working machines.

Unit III

4. SHEET METAL WORK: Cutting, bending and jointing of (ferrous / non ferrous metals) sheets, flats, bars, wires etc. Exercises in simple welding of angles, pipes sheets, flats.

Unit IV

5. PLUMBING: Introduction to various pipes and fittings screwed joints, threads bending and plumber's tools.

6. MASONARY: Handling the bricks, mixing the mortar, bond work of bricks, stones and masonry tools

Unit V

7. PAINTING & POLISHING: Preparation of timber and metal surfaces, priming, painting by brush, spray guns, polishing of timber surfaces, lamination to timber surfaces.

Note: The sessionals will be in the form of different job works and sheet works in each trade and models prepared by using the above methods. An internal viva at the end on all the job works or practical's may be carried out.

LIST OF TEXT AND REFERENCE BOOKS:

1716 - WORKSHOP-

1. what is meant by "art" as a cultural endeavor.
2. Define basic art terms and processes; develop a knowledge of and an ability to recognize design principles and elements in selected works of art.
3. Identify by artist, title, or style, major selected art works from various historical and global contexts in a variety of media.
4. Understand the highlights of the biographies of a variety of artists as they relate to the meaning of their works.
5. Study of different art isms such as Abstract Art, Dadaism, Brutalism, and Impressionism.
6. Recognize major periods of world art history.
7. Describe the techniques used in a variety of art media.
8. Develop a formal analysis of a work of art.
9. Evaluate the relationship of form to content and context.
10. Understand and identify the symbols used in iconographic art works.
11. Demonstrate an understanding of art criticism including the description, analysis, interpretation, and evaluation of a given work.
12. Develop a deeper understanding of the culture that we are currently immersed in, and the ability to think critically with regards to the images and visual forms that engage us.
13. ARTS IN TIME**:** Prehistoric, Egyptian, Greek, Roman, Medieval, Renaissance, Baroque, Rococo, Nineteenth Century, Twentieth Century, Art Since 1945
14. AESTHETICS AND QUALITY: Dimensions of Quality, Products and Service Design, The Value of Aesthetics in Business**SUGGESTED BOOKS**
15. Introduction to Art Appreciation and Aesthetics by Panizo, Rustia, Rex Bookstore, Inc.

FIRST YEAR - SECOND SEMESTER

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Cont Assignment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	**TB-1716 PB- 10722**	Design-II	3	7	10	100	50	**150**	03	06	50	100	**150**	**300**	07	10

AIM: The aim of the subject is to introduce to the students the design fundamentals, design vocabulary and impact of order of form, space and color scheme on the human psychology.

Course Content:

Unit I

1. Introduction of Architectural design with an approach of functional understanding and analysis of problems with studies of space requirements for different furniture (objects), activities and circulation. Relationship between occupied and unoccupied spaces.
2. Anthropometric study and analysis. Study of single units Viz / living area, sleeping area, cooking area, study area, toilet etc.

Unit II

3. Design of small shelters and study of multi units involving max. 3 to 4 functional spaces natural and manmade objects of functional and aesthetic value. Aspects of area determination in conjunction with relevant building Bye Laws and area relationship.

Unit III

4. Color theories and color schemes and its effect on the users.

Unit IV

5. Case studies for measured drawing of small buildings and furniture. Introduction to draw presentation drawings. Small views (isometric and perspective) of the studied buildings.

Unit V

6. Study and design of small structures like ceremonial gates, temporary exhibition stalls, drinking water fountains, milk booths etc.

Minimum one time problem of 6 hrs duration is to be attempted in class other than regular design problems.

Note: The sessional will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate reviews consisting of internal / external experts. There should be regular site visits to the building type dealt in the studio problem for which audio visuals should be prepared.

LIST OF TEXT AND REFERENCE BOOKS:

1717 - DESIGN-II

FRANCIS D.K. CHING, “Form, Space and Order”, Van Nosttrand Reinhold Co. Canada.

2. FRANCIS D.K. CHING, “Architectural Graphics”.

3. National Building Code
4. D.E. CHIRAIRA & CALLENDAR, “Times Saver Standard for Building Types”
5. Neufert Data Standards Ernst Neufert Archon Books
6. MAITLAND, GRAVES, “The Art of Color in Design”, McGraw Hill Book Co. 1951.
7. Rendering with pen and ink by Gill, Robert
8. EDWARD D. MILLS, “Planning, the Architects Handbook”, Butterworth, London 1905.
9. Architecture: Scale and proportion by Eugene Ruskin
10. Architectural Graphic Standard by Ramsay and Sleeper.
11. V.S. PARMAR, “Design Fundamentals in Architecture”, Somayya Publications Pvt. New Delhi 1973.
12. SCOTT. “Design Fundamentals”
13. G. BROND BENT, “Design in Architecture”
14. Architectural Rendering the techniques of contemporary presentation by Albert o Halse
15. Building Drawing Shah, Kale, Patki Tata Mcgraw Hill Publishing

FIRST YEAR - SECOND SEMESTER

SEMESTER – II

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Cont Assignment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
2	**TB-1717 PB- 10723**	Graphics- II	3	7	10	100	50	**150**	03	06	50	100	**150**	**300**	07	10

AIM: The aim of the subject is to introduce the students about the fundamentals of three dimensional visualization, realistic expression of ideas and presentation of architectural drawings. And introduce the students the computers as an analytical tool. They shall be introduced about the fundamentals understanding of various architectural software's and their use in designing, drafting of architectural drawings in two dimension forms and three dimensional forms for proper visualization and understanding and also for working and presentation drawings of architectural designs along with project documentation and management etc.

Course content:

Unit I PROJECTION & PERSPECTIVE:

- Projection of Complex geometrical objects to understand Building Elements.
- Introduction to basic terms, principles, types and techniques of perspective drawing: realistic expression of ideas.
- Two point perspective of simple objects (drafted & free hand)
- Presentation of interior and exterior views in one point perspective (drafted and free hand)

Unit II SCIOGRAPHY:

- Introduction to basic principles of sciography and it's application to the field of architecture.
- Sciography of two dimensional objects in plan and elevation.
- Sciography of three dimensional objects in plan, elevation and views, (Isometric, Axonometric and Perspective)
- Sciography of simple building elements.

Unit III Computer Aided Graphics

- Introduction to basic understanding of application software, such as Auto cad, Revit, Archicad, Rhino and other project management softwares.
- Advance Computer Aided Architecture Drafting (in various projections).

Unit IV presentation technique

- Architecture or allied project presentation technique.
- Graphical analysis of development project through computer.

Unit V – 3D Modeling

- 3-D modeling, animation and advance rendering techniques with the help of computers.

Note: The sessional will be in the form of drawings, sketches and computer aided graphics.

LIST OF TEXT AND REFERENCE BOOKS:

1718 GRAPHICS-II

1. S. MULLIK, " Perspective & Sciography", Allied Publishers Ltd.
2. ROBER W. GILL, "Basic Perspective, "Thames & Hudson, London 1974.
3. Interior Perspective in Architectural Design Graphics.
4. BERNARD ALKINS, "Architectural Rendering", Walter, Foster, Art books.
5. ROBERT W. GILL, "Advance Perspective", Thames & Hudson, London.
6. SUBRAMANIUM, "Introduction to Computer Vol. 1 & 2, Tata McGraw Hill.
7. MANOHAR CHANDWANI & ABHAY JAIN & N.S. CHANDWANI, "Elements of Computer Science", Jain Brothers, Karol Bag, New Delhi.
8. CHARLES SIEGAL, " Teach Yourself " 'c' "BPB" New Delhi.
9. CHARLES SIEGAL, "Mastering Foxpro", "BPB" New Delhi.
10. V. RAJARAM, " Computer Programming-FORTRAN 77", Pretice Hall.

FIRST YEAR - SECOND SEMESTER

SEMESTER – II

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Cont Assignment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
3	**TB-1718 PB- 10724**	Building Construction-I	4	2	06	50	30	**80**	04	03	30	40	**70**	**150**	02	06

Unit I

1. FOUNDATION: Brick, stone, plinth filling, entrance, steps/ramps plinth protection D.P.C. & coping, timbering.

2. ARCHES and LINTEL: Brick, stone lintels, centering materials and methods.

Unit II

3. PRECAST UNIT MASONRY: Concrete block, decorative brick work, compound, mud wall (C.B.R.I) other bonds.

Unit III

4. DOORS (TIMBER): Ledged braced and battened door, panel door, glazed door, flush door.

5. WINDOWS (TIMBER): Side and Top hung, pivoted, louvers, ventilators and fixed fanlight.

Unit IV

6. DOORS (METAL) PRESSED STEEL AND 'Z' SECTION: With and without fanlight.

7. WINDOWS (METAL) PRESSED STEEL AND 'Z' SECTION: Top and side hung, fixed, pivoted, louvers, ventilators and fanlight.

Unit V

8. MISCELLANEOUS: Jamb casing, architrave, pelmet, mouldings, skirting and window boards, door and window fixtures.

Note: Sessional shall be done as drawing sheets and occasional visits to construction sites. Minimum 8 sheets shall be prepared out of which two may be in the sketch form (scaled).

LIST OF TEXT AND REFERENCE BOOKS:

1719 BUILDING CONSTRUCTION-I

1. S.P. ARORA & BINDRA, "Building Construction" Dhanpat Rai & Sons
2. Building Construction, Punmia B.C. Laxmi Publishing, latest

3. Building Construction, Vol –I,II,III, Mackey W.L
4. The Construction of Building by Barry .R
5. Building Construction by Sushil Kumar
6. Building Construction by S C Rangwala
7. R. CHUDLEY : Building Construction Handbook Vol. 1 to 4 "British Library Cataloguing in Publication Data
8. MITCHEL: " Advance Building Construction", Allied Publishers Pvt. Ltd.
9. Fundamentals of Building Construction by Allen Edward
10. Construction Technology Mr Roy Chudley Roger Greeno

FIRST YEAR - SECOND SEMESTER

SEMESTER – II

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Cont Assignment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
4	**TB-1719 PB-10725**	History of Arch.-I	3	1	04	50	30	**80**	03	03	-	20	**20**	**100**	01	04

AIM: The course aims at understanding the influence of Geographical & climatic, cultural and political situation on Architecture in expressing philosophical and aesthetic concepts in built form. This course is studied in order to see how builders in the past solved their structural & functional problems.

This study of history gives the student a chance to study the structural basis of great styles, methods of admitting daylight, for planning and so on, as related to structure.

Importance is also attached to the sociological background i.e. political, economic, religious, technical and philosophic ideas and ideals which lie behind all buildings.

COURSE CONTENT:

This will be studied with the help of selected samples of buildings under the various historical civilizations of Indian and Asia in general, in chronological order.

Unit I

1. Pre historic civilization,
2. Vedic, Indus Valley civilization

Unit II

3. Buddhist period

Unit III

4. Jain period

Unit IV

5. Chinese
6. Japanese

Unit V

7. Pre Colombian
8. Mayan Civilization

Note: Sessionals will be submitted in the form of sketches notes, audio-visuals and reports of site visit to some historical buildings etc. as per programme scheduled by the school per session, Visual & video aided in teaching techniques.

LIST OF TEXT AND REFERENCE BOOKS:

1720- HISTORY OF ARCHITECTURE-I

1. PERCY BROWN, "Indian Architecture (Buddhist & Hindu), Taraporewala & Sons, Bombay.
2. CHRISTOPHER TADGILL, "History of Architecture in India", Phaidon Press.
3. Batleys Portfolio.
4. SATISH GROVER, "The Architecture of Indian (Buddhist & Hindu)", Vikas Publishing Housing Pvt. Ltd.
5. A VOL WANSEN, "Living Architecture (Indian)", Oxford & IBH London.
6. "Elements of Indian Architecture".
7. Hindu Art & Architecture, Michell, George, Thames & Hudson, 2007
8. History of Architecture: Settings and Ritual by Kostof, Spiro, Oxford Press , N.Y. ,1995
9. The Wonder that was India, Basham, A.L. , Penguin, Delhi, 1992
10. Prehistory to post modernism by Marvin & Isabel .

FIRST YEAR - SECOND SEMESTER

SEMESTER – II

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Cont Assignment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
5	**TB-1720 PB-10726**	Structure-II	3	1	04	50	30	**80**	03	03	-	20	**20**	**100**	01	04

AIM: The aim of the subject is to introduce the students about the fundamentals of stability of any built structure and various factors of structure designing. The objective of the course is to develop is the students a feel for structural principles and they relates to building design.

Course Content:

Unit I

1.Fixed and continuous beams: Relation between free B.M. diagram fixed B.M. diagram, slope deflection, fixed beam subjected to couple, continuous beam, Clapeyron's theorem of three moments.

Unit II

2. Moment distribution methods: fixed and continuous beams only.

Unit III

3. Study of types of structures: load bearing framed, rigid jointed, pin jointed, determinate, indeterminate.

Unit IV

4. Loads of stresses: Dead load, live load, wind load, earth quake forces, soil and hydrostatic pressure, load combinations, factor of safety, permissible stresses, standard specification and codes of practice.

Unit V

5. Analysis and stability of retaining walls: rectangular and trapezoidal only.

Note: Sessional work shall include assignments/tests on the above topics along with the drawings.

LIST OF TEXT AND REFERENCE BOOKS:

1721 STRUCTURE-II

C.S. REDDY, "Basic Structural Analysis", Tata McGraw Hill.

2. S.B. JUNNARKAR, "Applied Mechanics", Charotar Publications Ananad.
3. RAMAMURTHAM, "Applied Mechanics", Dhanpat Rai & Sons.
4. S.B. JUNNARKAR/H.J. SHAH, "Mechanics of Structure Vol.1", Charotar Pub.
5. DR. B.C. PUNAMIA, "Strength of Materials", Laxmi Pub.

6. RCC by Jain and Jaikrishna
7. RCC by Ramamrutham
8. Structuresby DL Schodek
9. Form and Structure in Architecture by Alexander Zamen
10. RCC – design and practice by N Krishna Raju and RN Pranesh

FIRST YEAR - SECOND SEMESTER

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Cont Assignment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
6	**TB-PB-10727**	Work Shop-II	-	2	02	-	- -	**-**	-	-	30	20	**50**	**50**	02	02

Unit I

Models made of paper, Acrylic sheets & cardboards

Unit II

Thermocole

Unit III

Steel Wires Mashes

Unit IV

plaster of Paris, White Cement Et.

Unit V

Other soft materials based on the program of design.

Note: Sessionals shall include exercises in block and detail model making of students own

design or copy design.

LIST OF TEXT AND REFERENCE BOOKS:

1722- WORKSHOP-II :

1. Identify the purposes and functions of art in human society and arrive at a coherent definition of what is meant by "art" as a cultural endeavor.
2. Define basic art terms and processes; develop a knowledge of and an ability to recognize design principles and elements in selected works of art.
3. Identify by artist, title, or style, major selected art works from various historical and global contexts in a variety of media.
4. Understand the highlights of the biographies of a variety of artists as they relate to the meaning of their works.
5. Study of different art isms such as Abstract Art, Dadaism, Brutalism, and Impressionism.
6. Recognize major periods of world art history.
7. Describe the techniques used in a variety of art media.

8. Develop a formal analysis of a work of art.
9. Evaluate the relationship of form to content and context.
10. Understand and identify the symbols used in iconographic art works.
11. Demonstrate an understanding of art criticism including the description, analysis, interpretation, and evaluation of a given work.
12. Develop a deeper understanding of the culture that we are currently immersed in, and the ability to think critically with regards to the images and visual forms that engage us.
13. ARTS IN TIME: Prehistoric, Egyptian, Greek, Roman, Medieval, Renaissance, Baroque, Rococo, Nineteenth Century, Twentieth Century, Art Since 1945
14. AESTHETICS AND QUALITY: Dimensions of Quality, Products and Service Design, The Value of Aesthetics in Business**SUGGESTED BOOKS**
15. Introduction to Art Appreciation and Aesthetics by Panizo, Rustia, Rex Bookstore, Inc.

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SECOND YEAR - THIRD SEMESTER

SEMESTER – III

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		Credit	
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	**TB-2711 PB- 20716**	Design-III	3	7	10	100	50	**150**	03	12	50	100	**150**	**300**	*07*	*10*

AIM: The aim of the course is to emphasis and evolves the methodology for architectural design with reference to the previous knowledge of function and aesthetics. The design should highlight the clear approach to the design with idea (concept), analysis, synthesis and clarity of details and architectural expression with use of appropriate graphic presentation techniques.

Course Content:

1. The design should be done with sensitivity towards surroundings i.e. Traditional and vernacular architecture, construction techniques and environment.
2. The range of design problems shall include projects of progressively increasing complexity.
3. The problems should include the small design exercises of nursery school, restaurants, small nursing homes, small offices, exhibition pavilions, canteens, kiosks etc.

One time problem is to be attempted of 12 hrs. Duration in class other than regular design problems.

Note: The sessionals will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate review consisting of internal / external experts. There should be regular site visits to the building types dealt in the studio problems of which audio-visual should be prepared.

LIST OF TEXT AND REFERENCE BOOKS:

2711 - DESIGN-III

1. 1. Identify the purposes and functions of art in human society and arrive at a coherent definition of what is meant by "art" as a cultural endeavor.
2. Define basic art terms and processes; develop a knowledge of and an ability to recognize design principles and elements in selected works of art.
3. Identify by artist, title, or style, major selected art works from various historical and global contexts in a variety of media.
4. Understand the highlights of the biographies of a variety of artists as they relate to the meaning of their works.
5. Study of different art isms such as Abstract Art, Dadaism, Brutalism, and Impressionism.
6. Recognize major periods of world art history.
7. Describe the techniques used in a variety of art media.
8. Develop a formal analysis of a work of art.
9. Evaluate the relationship of form to content and context.
10. Understand and identify the symbols used in iconographic art works.
11. Demonstrate an understanding of art criticism including the description, analysis, interpretation, and evaluation of a given work.
12. Develop a deeper understanding of the culture that we are currently immersed in, and the ability to think critically with regards to the images and visual forms that engage us.
13. ARTS IN TIME**:** Prehistoric, Egyptian, Greek, Roman, Medieval, Renaissance, Baroque, Rococo, Nineteenth Century, Twentieth Century, Art Since 1945
14. AESTHETICS AND QUALITY: Dimensions of Quality, Products and Service Design, The Value of Aesthetics in Business**SUGGESTED BOOKS**
15. Introduction to Art Appreciation and Aesthetics by Panizo, Rustia, Rex Bookstore, Inc.

SECOND YEAR - THIRD SEMESTER

SEMESTER – III

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		Credit	
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
2	**TB-PB- 20717**	Graphics III	3	4	07	-	- -	**-**	-	-	50	100	**150**	**150**	*07*	*07*

Unit I

1. Introduction to basic understanding of application software, such as Auto cad, Revit, Archicad.

Unit II

2. Advance Computer Aided Architecture Drafting (in various projections).

Unit III

3. Architecture or allied project presentation technique.

Unit IV

4. Graphical analysis of development project through computer.

Unit V

5. 3-D modeling, animation and advance rendering techniques with the help of computers.

Note: Sessional should be in the form of small exercises and written assignments.

LIST OF TEXT AND REFERENCE BOOKS:

2712 -

1. V. RAJARAM, " Computer Programming-FORTRAN 77", Pretice Hall.
2. SCHAUMS SERIES, " Computer Programming".
3. Auto CAD reference Manual.

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SECOND YEAR - THIRD SEMESTER

SEMESTER - III

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		Credit	
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
3	**TB-2712 PB- 20718**	Building Construction II	4	3	07	50	30	**80**	03	03	50	70	**120**	**200**	*03*	*06*

Unit I

1. Timber floor: single, double and triple.

Unit II

2. Timber roofs: flat, lean to type, couple, close couple.

Unit III

3. Trussed roof (timber) king post, queen post; built up truss (timber and concrete as per C.B.R.T).

Unit IV

4. Balconies, stairs and canopies (timber).

Unit V

5. Built in fittings & furniture: Wardrobe, cupboard, shelf, show-cases in houses.

Note: i) There should be regular site visits to buildings under construction or constructed to explain the above topics. Use of audio-visuals should be stressed.

ii) Minimum 8 sheets shall be prepared out of which two may be in sketch form (scaled).

S.P. ARORA & BINDRA, "Building Construction" Dhanpat Rai & Sons

2. Building Construction, Punmia B.C. Laxmi Publishing, latest
3. Building Construction, Vol –I,II,III, Mackey W.L
4. The Construction of Building by Barry .R
5. Building Construction by Sushil Kumar
6. Building Construction by S C Rangwala
7. R. CHUDLEY : Building Construction Handbook Vol. 1 to 4 "British Library Cataloguing in Publication Data
8. MITCHEL: " Advance Building Construction", Allied Publishers Pvt. Ltd.
9. Fundamentals of Building Construction by Allen Edward
10. Construction Technology Mr Roy Chudley Roger Greeno

SEMESTER – III

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		Credit	
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
4	**TB-2713 PB- 20719**	History of Arch.-II	3	1	04	50	30	**80**	03	03	-	40	**40**	**120**	*01*	*04*

This course is studied in order to see how builders in past solved their structural, functional and aesthetic problems. This survey of history gives the student a chance to study the structural basis of great styles, methods of admitting day light, decoration. Importance is also attached to the sociological background i.e. political, economic, religious, technical and philosophical ideas which lie behind all buildings. This will be studied with the help of selected examples of buildings of various historical civilizations in Europe the west in chronological order.

Unit I

1. Greek, Roman

Unit II

2. Early Christian, Byzantine

Unit III

3. Medieval (Romanesque, Gothic)

Unit IV

4. Renaissance

Unit V

5. Impact of Industrial revolution (up to 1942)

Note: Sessional will be submitted in the form of sketches (minimum say 20) notes, Audiovisuals and reports of site visit to some historical buildings etc. as per program scheduled by the school per session

LIST OF TEXT AND REFERENCE BOOKS:

2714 - HISTORY OF ARCHITECTURE-II

1. SIR BANISTER FLETCHER, “History of Architecture”, University of London.
2. S. LLOYD & H.W. MULLER, “History of World Architecture”, Fibre & Fibre Ltd. London.
3. JAMES FERGUSON - “History of India & Eastern Architecture”.
4. Prehistory to post modernism by Marvin & Isabel
5. Meaning in Western Architecture by Christian Norberg-Schulz
6. Architecture Through the Ages by Talbot Hamlin
7. Architecture : From Prehistory to Post-Modernity by Trachtenberg and Hyman
8. Space, Time and Architecture by Sigfried Gideon
9. Rethinking Architecture: a reader in cultural theory, Leach, Neil (Ed.)
10. When was modernism in Indian art? by Geeta Kapur

SECOND YEAR - THIRD SEMESTER

SEMESTER – III

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]				Credit	
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
5	**TB-2714 PB- 20720**	Structure-III	4	1	05	50	30	**80**	04	03	-	40	**40**	**120**	*01*	*05*

AIM: The aim of the subject is to introduce the students about the fundamentals of stability of built structures in steel sections and various factors of steel structure designing.

Course Content:

Unit I

1. Steel work connections: Bolted, pinned and Welded connections.

Unit II

2. Design of Tension members: Types of tension members, permissible stresses, Design of members subjected to axial tensions and bending. Tension splices, lug angles.

Unit III

3. Design of compression members: Types of compression members, failures, end conditions, effective length, design by I.S. Code800-2007 method. Strength of compression members, splices, encased columns.

Unit IV

4. Design of flexural members: Beams simple and built up, plate girder, criteria of design, design of laterally supported and laterally unsupported Beams, web crippling and web buckling.

Unit IV

5. Design of roof trusses: To determine the forces in members due to various loads, types of roof trusses, components of roof trusses, purling, lateral Bracing of end trusses, roof covering.

Note: i) Sessional work should include design and analysis of simple elements as stated above with drawings.
ii) Steel table & I.S. code 800-2007 is permitted in examination.

LIST OF TEXT AND REFERENCE BOOKS:

2715 - STRUCTURE-III

1. L.S. NEGI, “Design of Steel Structures”, Tata McGraw Hill.
2. ARYA & AJAMANI, “Design of Steel Structures”, Nemi Chand & Bros. Roorkee.
3. M. RAGHUPATHI, “Design of Steel Structures”, Tata McGraw Hill.
4. P. DAYARATNAN, “Design of Steel Structures”, Wheeler & Company Ltd.

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SECOND YEAR - THIRD SEMESTER

SEMESTER – III

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		Credit	
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
6	**TB-2715 PB- 20721**	Theory of Architecture	2	1	03	50	30	**80**	02	03	-	30	**30**	**110**	*02*	*04*

AIM: The courses in Theory of Architecture aim to evolve a conceptual frame work for intelligent appreciation of architecture and to develop a vocabulary for discussing design ideas. This course aims to inculcate among the students the understanding of various aspects of traditions, culture and socio economic developments which influence the thinking process and designing of physical forms.

Course Contents:

Unit I

1. Studies of folk art and crafts, indigenous architectural studies, influence of tradition, culture and socio-economic developments on art and architecture. Introduction to inquiries initiated by various Western and Indian philosophers.

Unit II

2. Understanding of determinants of physical form such as concepts of space, structure, organization, symbolism, mass, surface scale, order, proportion, rhythm, datum, axis, etc. in relation to place, time and society with due consideration for perceptual qualities as affected by colors, light conditions, vision angle etc.

Unit III

3. Communication and interpretations in architecture. The eloquence, aptness and style in architecture, their judgment and design.

Unit IV

4. Development in world architecture, environmental design and technology with reference to trend setting works of architects, designers, ecologists, engineers etc.

Unit V

5. Design parameters, principles, process, methods and program formulation. Design, matrices and system integration. Process of design synthesis.

Note: The structure of the courses consists of set of lectures and prescribed reading followed by group discussions and seminars.The sessional should be in the form of drawings technical report writing and presented in the seminar along with the audio visuals which will be based on buildings identified during regular site visits.

LIST OF TEXT AND REFERENCE BOOKS:

1. 2716 - MAITLAND GRAVES, “The Art of color and Design”, McGraw Hill book Co. INC.
2. BAHGA, “Modern Architecture in India”, Galgotia Pub.
3. CHRISTOPHER ALEXANDER, “Pattern Language”, Oxford University Press.

4. Leland M. Roth, “Understanding Architecture”, Craftsman House.
5. Kostof, Spiro, History of Architecture : Settings and Ritual , Oxford Press , N.Y. ,1995
6. Childe, Gordon, The Bronze Age, Past and Present, Penguin, 1942 (reprints thereafter)
7. Frankfort, Henri, The Birth of Civilization in the Near East, Williams and Norgate,1951
8. Casson, Lionel, (ed.), Ancient Egypt, Time Life Books, Amsterdam , 1987
9. Basham , A.L. , The Wonder that was India., Penguin, Delhi, 1992
10. Michell, George, Hindu Art & Architecture, Thames & Hudson, 2007
11. Creating Architectural Theory- The Role of the Behavioral Sciences in Environmental Design, by Jon Lang
12. The Theory of Architecture – ‘concepts, themes and practices’ by Paul-Alan Johnson
13. Personal space- the behavioral basis of design by Robert Sommer
14. Ekistics: an introduction to the science of human settlements, Kōnstantinos Apostolou Doxiadēs, Oxford University Press, 1968
15. W.A. Howard, Ekistics 1969, 312 (Nov. 1969)
16. C.A. Doxiadis, Emergence and Growth of an Urban Region; Vol.1, Analysis (1966); Vol. 2, Future Alternatives (1967); Vol. 3, A
17. Concept for Future Development (1970) (Detroit Edison Co., Detroit).
18. Past journals “Ekistics” published by Ekistic Institute, Athens, Greece

SEMESTER – IV

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]				
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		
			L	STUDIO / T	Total Contact Hour	I					II			Credit	I+II	
1	**TB-2716 PB- 20722**	Design-IV	3	7	10	100	50	**150**	03	12	50	100	**150**	**7**	**300**	*10*

AIM: Study of natural environmental factors, their impact and consideration by human settlements of a town on a part of a city. Especially on housing forms, open spaces, their activities and construction methods including energy efficient structures. The study of Architectural Design is seen as a cumulative process where the experience of the previous year is used as a base for increasing the depth and breadth of knowledge and development skills in the following year.

Course Content:

Emphasis on the following attitudes is important :- Detailed study of one or more of the following aspects – climatic considerations and relationship with life style. Emphasis on Consideration of constructional details, basic details of services like kitchen, toilets etc. and site planning of the scheme. Design problems with natural and man made parameters dealing with independent bungalows, farm houses, combined units, duplex type their cluster or grouping etc. along with relevant Building codes. The range of design problems shall include projects of progressively increasing complexity. The various aspects of the design problem shall be dealt with lectures, group discussions and library research so as to provide the necessary philosophical and attitudinal background to a rational design approach.

There should be minimum one time problem of 12 hrs. duration apart from regular design problems in the studio.

Note: The sessionals will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate review consisting of internal / external experts. There should be regular site visits to the building types dealt in the studio problems of which audio-visual should be prepared.

LIST OF TEXT AND REFERENCE BOOKS:

2717- DESIGN-IV

1. FRANCIS D.K. CHING, “Form, Space and Order”, Van Nosttrand Reinhold Co. Canada.
2. FRANCIS D.K. CHING, “Architectural Graphics”.
3. National Building Code
4. D.E. CHIRAIRA & CALLENDAR, “Times Saver Standard for Building Types”
5. Neufert Data Standards Ernst Neufert Archon Books
6. MAITLAND, GRAVES, “The Art of Color in Design”, McGraw Hill Book Co. 1951.
7. Rendering with pen and ink by Gill, Robert
8. EDWARD D. MILLS, “Planning, the Architects Handbook”, Butterworth, London 1905.
9. Architecture: Scale and proportion by Eugene Ruskin

10. Architectural Graphic Standard by Ramsay and Sleeper.
11. V.S. PARMAR, “Design Fundamentals in Architecture”, Somayya Publications Pvt. New Delhi 1973.
12. SCOTT. “Design Fundamentals”

13. G. BROND BENT, “Design in Architecture”
14. Architectural Rendering the techniques of contemporary presentation by Albert o Halse
15. Building Drawing Shah, Kale, Patki Tata Mcgraw Hill Publishing
16. John G. Rau and David C Hooten (Ed)., “Environmental Impact Analysis Handbook”, McGraw-Hill Book Company, 1990.
17. “Environmental Assessment Source book”, Vol. I, II & III. The World Bank, Washington, D.C., 1991.
18. Judith Petts, “Handbook of Environmental Impact Assessment Vol. I & II”, Blackwell Science, 1999

SEMESTER – IV

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]				
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		
			L	STUDIO / T	Total Contact Hour	I					II			Credit	I+II	
2	**TB-2717 PB- 20723**	Building Const III	3	4	07	50	30	**80**	03	03	50	70	**120**	**4**	**200**	*7*

Aim: The aim of the subject is to introduce the students about Execution of building component of steel and timber with their constructional details and presentation of working drawing.

Course content:

Unit I

Steel Foundation:

- Details of steel grillage foundation, steel column & beams.

Unit II

Timber and Steel Roof & Floors:

- Lean to; double lean to, collar, couple & closed couple roofs. King & queen post truss, Fixing of tiles, AC & GI gutters & ridges,
- Steel North light truss, Portal frames, space frames.
- Details of steel floors, fire resistant floors
- Jack Arch roofing, Stone roofing system
- Single, double & framed wooden floors, composite floor and fire resistant floors

Unit III

Steel doors & windows:

- Angle section & pressed steel hollow section door frames with timber, steel, iron door leaf.
- Angle section, 'z' section & pressed steel hollow section windows of different size, shape & combinations.
- Steel side hung, top hung, bottom hung & louvered ventilators.
- Fixing details of glass, ironmongery & hardware

Unit IV

Miscellaneous:

- Different types of steel stairs, railings, main gates and Grills etc.

Note: There should be regular site visits to buildings under construction or constructed to explain the above topics. Use of audio-visuals should be stressed. The Sessional shall be in the form of handmade drawings, and the evaluation will be through review system presented before the Faculty and Studio In charge.

LIST OF TEXT AND REFERENCE BOOKS:

2718- BUILDING CONSTRUCTION-III

1. S.P. ARORA & BINDRA, "Building Construction" Dhanpat Rai & Sons
2. Building Construction, Punmia B.C. Laxmi Publishing, latest
3. Building Construction, Vol –I,II,III, Mackey W.L
4. The Construction of Building by Barry .R
5. Building Construction by Sushil Kumar
6. Building Construction by S C Rangwala
7. R. CHUDLEY : Building Construction Handbook Vol. 1 to 4 "British Library Cataloguing in Publication Data
8. MITCHEL: " Advance Building Construction", Allied Publishers Pvt. Ltd.
9. Fundamentals of Building Construction by Allen Edward
10. Construction Technology Mr Roy Chudley Roger Greeno

SEMESTER – IV

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]				
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		
			L	STUDIO / T	Total Contact Hour	I					II			Credit	I+II	
3	**TB-2718 PB- 20724**	Building Science I (Climatology)	3	2	05	50	30	**80**	03	03	-	50	**50**	**2**	**130**	*5*

AIM: After successful completion of this course, student should be able to reflect a general awareness for the preservation and protection of the environment, in the planning and construction of their building / development projects.

COURSE CONTENTS:

Unit I Introduction, Structure and Function: Introduction to ecology, its meaning and growing importance in daily life. Basic terms used in ecology and their meanings. Fundamental concepts of ecology.

Unit II Ecology – Environment relationship. Concept of spaceship as earth. Structure and function of eco- system. Major biomes of the world. Bio-geo-chemical cycles: Energy flows in eco-system. Species diversity, dominance, natural selection, habitat, niche, evolution etc. Eco-system equilibrium.

Importance of micro organisms. Succession and community development limiting factors and other concepts. Ecological cybernetics

Unit III

Relationship with Nature: Man's relationship with nature in the past: Food-collecting, hunting, fishing, farming and other developmental stages in human civilization. Man's relationship with nature in the present: Industrial activities, urbanization, de-forestation, mining and similar incursions on nature for technological progress. Environmental impacts of these activities. The ecological crisis. Relevant case studies from abroad and India

Unit IV

Importance of Ecology: Relevance and growing importance of ecology in a highly urbanized and technological world with reference to dwindling resources, increasing demands and advancing technology. Adaptation of life-styles, and adoption of alternate technologies to harmonize with the natural environment. Discussion on alternatives available. Guiding environmental principles

Unit V

Ecological applications to Architecture and Planning: Ecological applications to Architecture and Planning. Preserving and improving the human settlement in harmony with nature. Conservation of natural resource for improving the quality of life on earth and attempting to ensure its continuity for the future of humanity. Eco cities, eco-communities and eco buildings: Archeology. Designing settlements and other man-made eco-systems. Ecological and environmental cities for sustainable future.

LIST OF TEXT AND REFERENCE BOOKS:

2719-Ecology & Environment

1. Fundamentals of Ecology by E.P. Odum
2. The Ecology of Man: An Ecosystem Approach by Robert Leo Smith

3. Introduction to Ecology by Kurmundi
4. Review Our Dying Planet by Sarala Devi
5. Ecological Crisis: Reading for Survival by G. A. Love & R.M. Love
6. Environmental Science : The Way the World Works by B.J. Mebol
7. Modern Concepts of Ecology by H.D. Kumar
8. Cerver Francisco a: world of landscape architects: world of environmental design. Ganduxer,
9. Cerver Francisco Asensio: Environmental restoration landscape.
10. Cever Francisco a: Elements of landscape world of environment.
11. Mukherjee Pippa: Nature Guides Common Trees Of India. Worldwide Fund For Nature
12. Papanek Victor: Green Imperative Ecology
13. Ethics In Design. Thames And Hudson,
14. Randhawa M S: Flowering Trees. India
15. Environmental analysis for land use and site planning. By Marsh Williams M. (MC Grew hill (1978)
16. Climate Change and Biodiversity-Edited by Thomas Lovejoy and Lee Hannah-TERI publication
17. Landscape Planning and Environmental Applications-By M.W.Marsh
18. River Ecology-by Prakash Gole

SEMESTER – IV

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]				
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		
			L	STUDIO / T	Total Contact Hour	I					II			Credit	I+II	
4	TB-2719 PB- 20725	History of Arch III	3	1	04	50	30	80	03	03	-	30	30	1	110	*4*

AIM: This course is studied in order to see how builders in the past solved their structural, functional and aesthetic problems. This survey of history gives the student a chance to study the structural basis of great styles, methods of admitting daylight, for decoration, for planning and so on, as related to structure. Importance is also attached to the sociological background i.e. political, economic, religious, technical and philosophic ideas and ideals which lie behind all buildings. This will be studied with the help of selected samples of buildings under the various historical civilizations of Indian and the oriental in general, in chronological order. This subject intends to develop an understanding in Contemporary Architecture in India and abroad.

Course Content:

Unit I

1. The impact of the Industrial Revolution on Architecture. Transformation from Iron to Steel and the demand for a new Architecture.
2. The great Exhibition and their contribution to architecture custom entitle and his tower.

Unit II

3. Le Art Nouveau Movements, Horte, Barlage, Wagner. Solar architecture. Passive solar architecture.
4. Ferro Concrete in American Architecture, Plain surfaces in American Architecture Informal Plan.
5. The Chicago School, Apartment, Office Building & Departmental Stores of Louis Sullivan & Others.
6. F.L. Wright and the American Development, his urge towards organic architecture & his means of architectural expression.
7. Le Corbusier & his Philosophy, Bauhaus.
8. Meis Van Der Rohe & the Integrity of Form.
9. Alvar Alto, Irrationality & Eminent Standardization.

Unit III

10. Typical works & philosophy of eminent Architects like – Richard Neutra Jorn Utzon, Oscar Neimyer, Lucio Costa, Marcel Frever Eero Serinen, Skidomore Owings & Merril etc.
11. Influence of Modern Structural System on Architectural E.G. work of Marti, Canada etc.
12. Erie's Survey & Evaluation of early Architectural work in India.

Unit IV

13. Colonial Architecture in India, emerging trends, works of Le Corbusier and Louis Kahn in India and their influence of Indian architecture.
14. Meaning and element of vernacular architecture and related terms
15. Chronological development of vernacular architecture in India

Unit V

16. Contemporary Indian architects: A. P. Kanvinde, Charles Correa, B. V. Doshi, etc. their philosophies and examples.
17. Postmodern architecture in India, examples.

Note: Sessional will be submitted in the form of sketches (min. say 20) notes, audio-visuals and reports of site visit to some historical / Modern buildings etc. as per program scheduled by the Dept. / Institution, Visual & video aided in teaching techniques.

LIST OF TEXT AND REFERENCE BOOKS:

2720 - HISTORY OF ARCHITECTURE-III

1. SIR BANISTER FLETCHER, "History of Architecture", University of London.
2. S. LLOYD & H.W. MULLER, "History of World Architecture", Fibre & Fibre Ltd. London.
3. JAMES FERGUSON - "History of India & Eastern Architecture".
4. Prehistory to post modernism by Marvin & Isabel
5. Meaning in Western Architecture by Christian Norberg-Schulz
6. Architecture Through the Ages by Talbot Hamlin
7. Architecture : From Prehistory to Post-Modernity by Trachtenberg and Hyman
8. Space, Time and Architecture by Sigfried Gideon
9. Rethinking Architecture: a reader in cultural theory, Leach, Neil (Ed.)
10. When was modernism in Indian art? by Geeta Kapur

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SECOND YEAR - FOURTH SEMESTER

SEMESTER – IV

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]				
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block		
			L	STUDIO / T	Total Contact Hour	I					II			Credit	I+II
5	**TB-2720 PB- 20726**	Structure IV	4	1	05	50	30	**80**	04	03	-	50	**50**	**1**	**130**	*5*

AIM: The aim of the subject is to introduce the students about the fundamentals of stability of built structures in R. C. C. and various factors of R.C. C. structure designing.

Course Content:

(1) Introduction to R.C.C., Working Stress method (introduction only), Limit State method

(2) Design of Beams: - analysis of beams, design of singly, doubly reinforced beam, T-beam, L-beam, (cantilever and simply supported) lintel, chhajjas

(3) Design of Slabs: - analysis of slabs, design of One way, Two way, Continuous, Cantilever Slabs (simply supported and continuous)

(4) Design of Columns: - axially loaded, columns with Uni-axial and Bi-axial bending

(5) Design of Staircases: - dog-legged, and open well only

Note: i) Sessional work should include the analysis of simple elements along with the drawings using limit state method.

ii) I.S. code 456-2000, SP -16 is permitted in examination.

LIST OF TEXT AND REFERENCE BOOKS:

2721 - STRUCTURE-IV

- "RCC" by Jain and Jaikrishna
- "RCC" by Ramamrutham
- "Structures" by DL Schodek
- "Form and Structure in Architecture" by Alexander Zamen
- "RCC – design and practice" by N Krishna Raju and RN Pranesh

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SECOND YEAR - FOURTH SEMESTER

SEMESTER – IV

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks									Grand Total	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work/ Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			Credit	I+II	
6	**TB-2721 PB- 20727**	Survey & Leveling	2	3	05	50	30	**80**	02	03	-	50	**50**	**3**	**130**	*5*

AIM: The aim of the subject is to introduce the students about the various aspects of surveying and its relative use in the field of architecture.

Course Content:

Unit 1. Aspects of surveying for the Architect. Surveying instruments classification by function. Useful data and formulae.
Unit 2. Scales-Plain scale, diagonal scale, comparative scale, shrunk scale, vernier scale.
Unit 3. Study, test, degree of accuracy, use and care of surveying instruments and accessories.
Unit 4. Site survey techniques: Chain surveying, compass surveying, plain table, theodolite.
Unit 5. Leveling and contouring.

Note: Class work and field work of the above subject should be oriented towards the layout of buildings and preparation of measured drawings. Students should also be taken to site visits for explaining the practical aspects of surveying.

LIST OF TEXT AND REFERENCE BOOKS:

2722- SURVEY & LEVELLING

- "Surveying Vol -1" by Dr. PC Punmia
- "Surveying and Leveling (Vol -1)" by Kanetkar TP and Kulkarni SV
- "Surveying and Leveling" by S C Rangwala

SEMESTER – V

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit II	Total Credits I+II
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit I		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	**TB-3711 PB- 30716**	Design-V	3	7	10	100	50	**150**	03	18	50	100	**150**	**300**	07	10

AIM: Design of imaginative forms to develop the creativity in terms of built form. Design with application of principles and theory of architectural design and philosophies of contemporary architects. The attempt is towards developing ones own language and philosophy of architecture to guide towards exploring alternative building forms for different activities which help in understanding the relationship of structure and possibilities in building forms.

Course Content:

Design problems should include problems of simple and complex nature i.e. temple, gathering places, exhibition pavilion, clubs, cafe, community hall, museums, art gallery, pavilion, sport complexes, nursing homes.

Emphasis shall be given more on three dimensional studies to develop an understanding for man and space relationship and also relevant building bye-laws.

There should be variety of problems in the studio work with changing focus for each problem from theory to construction techniques (local) and site lay outs, covering organization and detailing of open spaces with the aim to learn to work with practical limitations.

One group exercise of making measurement drawings of a building for documentation.

Minimum one time problem is to be attempted in class, of 18 hrs duration.

Note: The sessionals will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate review consisting of internal / external experts. There should be regular site visits to the building types dealt in the studio problems of which audio-visual should be prepared. The range of design problems shall include projects of progressively increasing complexity. The various aspects of the design problem shall be dealt with lectures, group discussions and library research so as to provide the necessary philosophical and attitudinal background to a rational design approach.

LIST OF TEXT AND REFERENCE BOOKS:

3711 - DESIGN-V

1. FRANCIS D.K. CHING, “Form, Space and Order”, Van Nosttrand Reinhold Co. Canada.
2. FRANCIS D.K. CHING, “Architectural Graphics”.
3. National Building Code
4. D.E. CHIRAIRA & CALLENDAR, “Times Saver Standard for Building Types”
5. Neufert Data Standards Ernst Neufert Archon Books
6. MAITLAND, GRAVES, “The Art of Color in Design”, McGraw Hill Book Co. 1951.
7. Rendering with pen and ink by Gill, Robert
8. EDWARD D. MILLS, “Planning, the Architects Handbook”, Butterworth, London 1905.

9. Architecture: Scale and proportion by Eugene Ruskin
10. Architectural Graphic Standard by Ramsay and Sleeper.
11. V.S. PARMAR, “Design Fundamentals in Architecture”, Somayya Publications Pvt. New Delhi 1973.
12. SCOTT. “Design Fundamentals”
13. G. BROND BENT, “Design in Architecture”
14. Architectural Rendering the techniques of contemporary presentation by Albert o Halse
15. Building Drawing Shah, Kale, Patki Tata Mcgraw Hill Publishin
16. Garden Cities: Theory & Practice of Agrarian Urbanism By Andrés Duany and Duany Plater-Zyberk
17. By the City, For the City: An Atlas of Possibility for the Future of New York by The Institute for Urban Design Multi-Story Books
18. Pocket Neighborhoods: Creating Small-Scale Community in a Large-Scale World by Ross Chapin Taunton Press

SEMESTER – V

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit II	Total Credits I+II
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit I		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
2	**TB-3712 PB- 30717**	Building Construction-IV	3	4	07	50	30	**80**	03	03	50	70	**120**	**200**	07	10

Aim: The aim of the subject is to introduce the students about Execution of building component with their constructional details and presentation of working drawing.

Course Content:

Unit I

R.C.C. Foundation

- Definition, functions, and design factors.
- Details of different types of RCC foundations, strip, isolated, continuous and raft foundation

Unit II Joinery works

- Shoring, scaffolding, underpinning.
- Formwork for R. C. C. construction.

Unit III R.C.C. works

- Definitions, functions and design factors.
- R.C.C. column, beams, slabs, lintel, chajja, staircase, canopy, coffer slab & pergola.
- R.C.C. retaining wall & construction of basement. Expansion joints.
- Pre stressed R.C. C construction.
- Study of low cost construction systems.

Masonry:

Study of various types of Pre-cast concrete blocks their extensive uses in building construction.

Unit IV Flooring

- P.C.C., terrazzo, stone (marble, Kota, granite, etc) Ceramic tiles & P.V.C. Flooring.
- Pre-cast paving.

Unit V R.M.C. (Ready- Mix Concrete)

- Introduction of R.M.C.
- R.M.C. Properties, techniques

Note: There should be regular site visits to buildings under construction or constructed to explain the above topics. Use of audio-visuals should be stressed.

The Sessional shall be in the form of handmade drawings, and the evaluation will be through review system presented before the Faculty and Studio In charge.

LIST OF TEXT AND REFERENCE BOOKS:

3712 - BUILDING CONSTRUCTION- IV

1. S.P. ARORA & BINDRA, "Building Construction" Dhanpat Rai & Sons
2. Building Construction, Punmia B.C. Laxmi Publishing, latest
3. Building Construction, Vol –I,II,III, Mackey W.L
4. The Construction of Building by Barry .R
5. Building Construction by Sushil Kumar
6. Building Construction by S C Rangwala
7. R. CHUDLEY : Building Construction Handbook Vol. 1 to 4 "British Library Cataloguing in Publication Data
8. MITCHEL: " Advance Building Construction", Allied Publishers Pvt. Ltd.
9. Fundamentals of Building Construction by Allen Edward
10. Construction Technology Mr Roy Chudley Roger Greeno

THIRD YEAR - FIFTH SEMESTER

SEMESTER – V

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit II	Total Credits I+II
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit I		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
3	**TB-3713 PB- 30718**	Building Services-I (Sanitation & Plumbing)	3	2	05	50	30	**80**	02	03	-	40	**40**	**120**	02	04

AIM: The objective of the course is to provide a wide exposure to environmental support systems as they apply to human habitat. The course shall cover the basic aspects of (1) Environmental control (ii) Water and waste management and planning.

Course Content:

A) SANITATION

Unit 1. Basic principles of sanitation, introduction to modern plumbing system. Study of Indian standards and plumbing bye laws. General introduction to various sanitary fitting & fixtures their placement and functions. Study of internal & external drainage system including study of duct for large verity of buildings including small residences, apartments, block of houses, public buildings etc.

Unit 2. Study of various types of sanitary pipes, construction of joints and laying of pipes. Study of traps, inspection chamber, man hole, septic tanks, soak pit and public sewage line. Study of various stages of disposal of domestic effluent from fitting to sewer line. Study of "Sulabha" complex & other "CBRI" toilet details. Study of storm water disposal in various buildings and road side.

Unit 3. Importance of sanitary services in the economics of buildings, planning & design disposal of city effluent, various treatment methods of city effluent and recycle of waste water. Study of refuse chutes in multistoried buildings and collection of refuse and recycle of city solid wastes.

B) WATER SUPPLY:

Unit 4. Study of sources of water and water treatment for city domestic purpose. Study of quality of potable water.

Unit 5. Study of Indian standards and water supply network. Architectural approach to plan the domestic water storage facilities and water distribution system in buildings.

Note: Sessional will be prepared in the form of sanitation schemes, water supply schemes and design of toilets of the given buildings or buildings.

LIST OF TEXT AND REFERENCE BOOKS:

3713 - BUILDING SERVICES - I (SANITATION & PLUMBING)

1. "Sanitary Engineering – (Vol I and II)" by RS Deshpande
2. "Water Supply and Sanitary Engineering" by S Birdii
3. "Water Supply and Sanitary Engineering" by Charanjit S Shah (Arch. Handbook series)
4. "Relevant IS Codes of India"
5. Water Supply and Sanitary Engineering" by S.C. Rangwala

THIRD YEAR - FIFTH SEMESTER

SEMESTER - V

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks									Grand Total	Credit II	Total Credits I+II
						Theory Block [TB]					Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment		Total theory block	Credit I		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I						II			I+II		
4	**TB-PB- 30719**	Working Drawing & Measurement Drawings	-	5	05	-	-	-	**-**	-		50	50	**100**	**100**	05	05

AIM: The aim of this subject is to understand the importance of working drawings, the methodologies, etc. for executing the drawing. This also requires standard mode of presentation of drawings with respect to Building Bye laws.

Course Content:

Unit 1. Introduction to various building components and precise purpose of set of working drawings. Study of each drawing with reference to specification & schedules of structure, services i.e. electrical, water supply, sanitation, air conditioning and communication.

Unit 2. Preparations of check list as guide for list of working drawings. Study of building bye-laws for various construction details & fire protection. Method of representing various contents & specific information in working drawings.

Unit 3. Preparation of municipal drawings and importance of working drawing as a legal document and tender document.

Unit 4. Preparation of municipal drawings and working drawing as a legal and tender document and submission drawing.

Unit 5. One set of working drawing of students own previous / current design.

Note: Sessional shall be in the form of full set of working drawing and design details of given building plan. The sessional marks will be based upon the portfolio submitted and internal viva. Studio programme integrated with A-221. Production of a set of detailed working drawings.

LIST OF TEXT AND REFERENCE BOOKS:

3714 - Working Drawing & Measurement Drawings

1. Architecture: design, engineering, drawing, William Perkins Spence, McKnight Pub. Co., 1979
2. Goetsch, David L.; Chalk, William S.; Nelson, John A. (2000). Technical Drawing. Delmar Technical Graphics Series (Fourth ed.). Albany: Delmar Learning.
3. Jefferis, Alan; Madsen, David (2005), Architectural Drafting and Design (5th ed.), Clifton Park, NY: Delmar Cengage Learning,
4. Ivan Viola and Meister E. Gröller (2005). "Smart Visibility in Visualization". In: Computational Aesthetics in Graphics, Visualization and Imaging. L. Neumann et al. (Ed.)
5. Ralph W. Liebing (1999). Architectural working drawings. John Wiley and Sons, 1999.

THIRD YEAR - FIFTH SEMESTER

SEMESTER – V

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit II	Total Credits I+II
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit I		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
5	**TB-3714 PB- 30720**	Modern Structural Systems	3	1	04	50	30	**80**	02	03	-	40	**40**	**120**	02	04

AIM: The aim of the subject is to introduce the students about the fundamentals of stability of Modern structures in R. C. C. and various factors of R.C. C. structure designing.

Course Content:

Unit I

(1) Design of Flat Slab

(2) Design of continuous and isolated footings

Unit II

(3) Design of combined footing :- types of combined footing, design of combined footing (rectangular and trapezoidal only)

(4) Appropriate methods for an analysis for frames by portal method, cantilever method (horizontal forces only)

Unit II

(5) Pre stressed concrete:- pre stress and pre stressing methods, type and classification of pre stressing, losses of pre stressed

(6) Specific constructional considerations for earthquake resistance structures, coastal areas.

Unit IV

(7) Conceptual structural systems for high rise buildings such as verendeal trusses, shear wall etc.

(8) Domes, shells, vaults, arches (all types) in masonry, R.C.C., timber.

Unit V

(9) Space frames, geodesic domes, Large span roofing, special areas, Gymnasium, Airports and Stadiums.

(10) Modern construction systems such as lift slab, folded plates, tensile structures etc.

NOTE: i) I.S. code 456-2000, SP -16 is permitted in examination.

ii) Sessional work should include the analysis and design of simple elements along with the drawings using limit state method only for units from 1 to 3 and for rest only an idea along with sketches shall be taught to the students.

LIST OF TEXT AND REFERENCE BOOKS:

3715 - MODERN STRUCTURAL SYSTEMS

1. SALVADORI, "Structures in Architecture".
2. SALVADORI, "Structural Design in Architecture".
3. ROBERT, E. FISCHER, "New Structure", McGraw Hill Co

THIRD YEAR - FIFTH SEMESTER

SEMESTER – V

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit II	Total Credits I+II
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit I		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
6	**TB-3715 PB- 30721**	Site Planning	2	3	05	50	30	**80**	02	03	50	30	**80**	**160**	02	04

AIM: The objective of this subject is to introduce students about site planning and landscape architecture i.e. about the natural and manmade environment, thereby enhancing the outdoor environmental quality in architectural design. This course intends to develop an understanding of Site Planning and landscape architecture to compliment architectural design. The objective is to develop an understanding of landscapes through their evolution in history and it being an integral part of the design process. It is seen as a course that addresses issues of environment and sustainability. The studio will also look at the further development of the first term architectural design project in urban peripheries context to understand the environmental impact of architecture in a context.

Course Contents:

Unit I

1. Site planning, its interpretations, scope its importance Natural & Man made environment. Ecosystem, Ecological balance, interaction between built environment & ecosystem Ecological approach to design.
2. Natural Resources, Land, Water & Plants their environmental & ecological considerations.
   Macro & Micro climate, Microclimatic analysis, climatic Elements & their modification.
3. Site selection criteria, site survey, inventory & analysis, site planning process. Site development, guidelines for excavation & grading, circulation, site drainage, water supply, vegetation cover & Landscape furnishings.

Unit II

4. Circulation systems: Types, hierarchy & layout patterns, planning & design criteria for pedestrian movement, vehicular movement & parking areas.
5. Buildings & outdoor spaces, their relationship & composition, Elements of visual design -point, line, form, colour & texture. Site Volumes, enclosures, site structure, expression.

Note: Sessional will be in the form of report on the above topics and drawings based on the landscape design of a neighborhood space. Identification of minimum 20 common Indian trees and 25 common Indian Shrubs

LIST OF TEXT AND REFERENCE BOOKS:

3716 - SITE PLANNING

1. Cerver Francisco a: world of landscape architects: world of environmental design. Ganduxer,
2. Cerver Francisco Asensio: Environmental restoration landscape.
3. Cever Francisco a: Elements of landscape world of environment.
4. Mukherjee Pippa: Nature Guides Common Trees Of India. Worldwide Fund For Nature
5. Papanek Victor: Green Imperative Ecology
6. Ethics In Design. Thames And Hudson,
7. Randhawa M S: Flowering Trees. India
8. Environmental analysis for land use and site planning. By Marsh Williams M. (MC Grew hill (1978)
9. Climate Change and Biodiversity-Edited by Thomas Lovejoy and Lee Hannah-TERI publication
10. Landscape Planning and Environmental Applications-By M.W.Marsh
11. River Ecology-by Prakash Gole
12. Site planning, Lynch, Kevin
13. A Guide to Site and Environmental Planning,Rubinstein, Harvey M.
14. Grade Easy, Untermann, Richard K.
15. Site Planning for Cluster Housing, Untermann, Richard K.
16. Design with Nature, McHarg, Ian
17. Urbanization Primer, Caminos, Horatio, and Reinhard Goethert
18. Designed for Recreation, Beazley Elizabeth
19. Campus Planning, Dober, Richard P.The Granite Garden, Spirn, Anne Whiston

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THIRD YEAR - SIXTH SEMESTER

SEMESTER – VI

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	**TB-3716 PB- 30722**	Design-VI	3	7	10	100	50	**150**	03	18	50	100	**150**	**300**	07	10

AIM: This program gives special emphasis on role of technology in architecture. The design projects to be dealt in the studio should respond to the importance of structure and services including acoustical treatments.

Course Content:

Unit I - The range of design problems shall include projects/ of progressively increasing complexity.

Unit II Exercises related to public buildings i.e. Commercial centre, hospital, auditorium, cinema, sports complex & educational buildings on sloping/ flat sites.

Unit III Study and incorporation of building bye-laws should be complete in this Sem.

Unit IV Simultaneously, stress should be given on the interior treatment of small and large spaces.

Unit V Freedom in design is to be given with preliminary introduction of importance and role of bye laws in building design.

Minimum one time problem of 18 hrs. duration is to be attempted in class, in addition to the major design problems.

Note: The sessionals will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate review consisting of internal / external experts. There should be regular site visits to the building types dealt in the studio problems of which audio-visual should be prepared. The various aspects of the design problem shall be dealt with lectures, group discussions and library research so as to provide the necessary philosophical and attitudinal background to a rational design approach.

LIST OF TEXT AND REFERENCE BOOKS:

3717 - DESIGN-VI

1. FRANCIS D.K. CHING, “Form, Space and Order”, Van Nosttrand Reinhold Co. Canada.
2. FRANCIS D.K. CHING, “Architectural Graphics”.
3. National Building Code
4. D.E. CHIRAIRA & CALLENDAR, “Times Saver Standard for Building Types”
5. Neufert Data Standards Ernst Neufert Archon Books
6. MAITLAND, GRAVES, “The Art of Color in Design”, McGraw Hill Book Co. 1951.
7. Rendering with pen and ink by Gill, Robert
8. EDWARD D. MILLS, “Planning, the Architects Handbook”, Butterworth, London 1905.
9. Architecture: Scale and proportion by Eugene Ruskin
10. Architectural Graphic Standard by Ramsay and Sleeper.
11. V.S. PARMAR, “Design Fundamentals in Architecture”, Somayya Publications Pvt. New Delhi 1973.
12. SCOTT. “Design Fundamentals”
13. G. BROND BENT, “Design in Architecture”

14. Architectural Rendering the techniques of contemporary presentation by Albert o Halse
15. Building Drawing Shah, Kale, Patki Tata Mcgraw Hill Publishing
16. Rapoport, Amos: House Form and Culture
17. Rudofsky, Bernard: Architecture without Architects
18. Oliver, Paul: EVAW Joglekar, M. N.: Contemporary Architecture in India
19. Mc Camant & Durrett: Co-housing
20. Bhatia, Gautam – Life, Works and Writings of Laurie Baker
21. Correa, Charles – Housing and Urbanisation

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THIRD YEAR - SIXTH SEMESTER

SEMESTER – VI

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
2	**TB-3717 PB- 30723**	Adv Building Construction	3	4	07	50	30	**80**	03	03	50	70	**120**	**200**	*04*	*07*

Aim: The aim of the subject is to introduce the students about Execution of building component with their constructional details and presentation of working drawing.

Course content:

Unit 1

Special Doors & Windows

- Sliding, folding, sliding and folding doors, revolving doors.
- Rolling shutters, collapsible doors, iron main gate.
- Bay windows, skylights.

Unit II Finishes:

- Partitions and paneling (timber, glass, PVC)
- Cladding - interior & exterior
- Jamb casing, skirting, moldings, architraves & pelmet

Unit III Water Services

- Waterproofing of basement, construction of pools.

Unit IV Fire & Heat Services

- Fire places and flues.
- Heat and sound insulation.

Unit Safety

- Fire safety Construction techniques.

Note: There should be regular site visits to buildings under construction or constructed to explain the above topics. Use of audio-visuals should be stressed. The Sessional shall be in the form of handmade drawings and the evaluation will be through review system presented before the Faculty and Studio In charge.

LIST OF TEXT AND REFERENCE BOOKS:

3718 - BUILDING CONSTRUCTION-V

1. S.P. ARORA & BINDRA, “Building Construction” Dhanpat Rai & Sons
2. Building Construction, Punmia B.C. Laxmi Publishing, latest
3. Building Construction, Vol –I,II,III, Mackey W.L
4. The Construction of Building by Barry .R
5. Building Construction by Sushil Kumar
6. Building Construction by S C Rangwala

7. R. CHUDLEY : Building Construction Handbook Vol. 1 to 4 "British Library Cataloguing in Publication Data
8. MITCHEL: " Advance Building Construction", Allied Publishers Pvt. Ltd.
9. Fundamentals of Building Construction by Allen Edward
10. Construction Technology Mr Roy Chudley Roger Greeno

THIRD YEAR - SIXTH SEMESTER

SEMESTER - VI

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
3	**TB-3718 PB- 30724**	Building Services-II (Electrical & Mechanical)	3	2	05	50	30	**80**	03	03	-	50	**50**	**130**	*02*	*05*

Aim: The aim of the subject is to introduce the students about the aspects of electrical wiring and air conditioning in a building, learning about various equipment and fittings available in the market and preparing basic design lay out for various services and typical details.

Course Content:

SECTION-A: ELECTRICAL

Unit I

1. Fundamentals of electricity, Principles of wiring.
2. Fitting and accessories used in electrical installation of buildings including water proof and spark proof installation. Schematic diagrams of installation for different building types, lighting conductors, earthing, distribution & calculation of loads.

Unit II

3. Brief study of electrical appliances, Sub-station, location and space requirement, relevant electricity board rules for various types of buildings.
4. Illumination: Laws of illumination. Direct, indirect and semi direct lighting, reflectors, decorative lighting. Flood lighting and use artificial lighting as an element in architectural schemes particularly in exhibition, cinemas, theaters, concert, concerts halls and stadiums.
5. Rules and layout for telephone wiring & connection with EPBX.

SECTION - B: MECHANICAL

Unit III

1. The fundamentals of psychometric and heat transfer. Physiological effects of air conditioning.
2. Air conditioning methods, systems, types and equipment to maintain the atmosphere at required temperature, humidity and cleanliness.
3. A.C. duct designing, detailing and layout. (No calculations required)

Unit IV

2. Lifts, moving walkways and escalators, layout of lifts and or escalators in buildings(Multi storey to high rise).

Unit V

5. Apparatus and system of alarms, firefighting equipments, fire fighting bye-laws governing various types of public buildings. Fire escape staircases.

Notes: Sessionals will be in the form of notes, home assignments, drawings/layout exercises showing the electrical and mechanical services details and case studies if required.

LIST OF TEXT AND REFERENCE BOOKS:

3719 - BUILDING SERVICES-II (ELECTRICAL & MECHANICAL)

ELECTRICAL SERVICES

1. Electrical Technology" by H Cotton,
2. "Electrical Wiring Estimating & Costing" by S. L. Uppal.(Khanna Publications, New Delhi)
3. Light right – TERI Manual
4. "Basic Electrical Engg. By Anwari
5. Specification year Book"
6. B. L. THAREJA "Text book of Electrical Technology", S. Chand and Co.
7. UPPAL, "Text Book of Electrical Technology", Khanna Publishers.
8. "National Building Code".
9. FRANK R. DAGOSTINO, "Mechanical and Electrical systems in construction and Arch"
10. Reston Pub. Virginia U.S.A
11. S.C. ARORA AND A. DOMKUNDWAR, "Refrigeration and Air conditioning", Dhanpat Rai & Sons.
12. 3. HERBERT. W. STANFORD, "Heating Ventilation and A.C. systems", Prentice Hall.

SEMESTER – VI

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
4	**TB-3719 PB- 30725**	Specifications, Estimating & Costing	3	2	05	50	30	**80**	03	03	-	40	**40**	**120**	*02*	*05*

AIM: Art of writing specifications of materials along with emphasis on the quality of materials & proper sequence of construction work should be brought out. The students shall be exposed to the various methods of calculating the quantities of various materials / items used in the buildings. This subject will give them an understanding and insight the role of material, construction and cost together for budgeting the project cost.

Course Contents:

Unit I

SPECIFICATIONS OF MATERIALS:

1. Importance of specifications in the building activities, method of writing correct order and sequence of use of materials, use of Indian Standard Specifications and P.W.D. specifications.
2. Primary consideration for selection of materials for various applications. Specifications of basic materials required in residential buildings, such as bricks, stones, concrete, RCC, plastering and various finishes, roofing material timber work, flooring materials, glazing, metals such as steel, brass, aluminum etc.

Unit II

SPECIFICATIONS OF WORKS:

1. Specifications of works for a residential building of load bearing type and or RCC/framed type.
2. Specifications of works of construction of steel and RCC structures, ceiling and partitions, paneling, insulation and water proofing.
3. Specifications for services such as drainage, water supply, electrical installations.

B) Estimating & Costing :

Unit III

1. Introduction to quantity surveying, methods of preparing estimates, data required for framing an estimate, types of estimates.
2. Mensuration, standard mode of measurements, schedule of rates commercial abbreviations. Methods and procedure of taking off abstractions, working up and billing. Examples and exercises in taking in all items from excavation to painting including R.C.C. and steel work.
3. Rate analysis, cost of materials and labour for various works, detailed rate analysis of important items of construction work. Measurement of work for interim and final certificates of payments to contractors.

Unit IV

3. General terms: Administrative approval technical sanction, competent authority, deposit works, issue rates, payment on accounts, suspense accounts, imprest, indent of stores, muster roll, measurement book, materials site account, stock account, establishment charge etc.

Unit V

5. Method and contents of technical report for obtaining technical/financial sanction.

Note: Sessionals are to be prepared in the form of exercises and small reports on above mentioned topics.
The sessional work will include notes, tests, and home assignments particularly about proprietary materials along with manufacturer's specification.

LIST OF TEXT AND REFERENCE BOOKS:

3720 - SPECIFICATIONS & ESTIMATING & COSTING

1. "Bombay P.W.D. Specification 1962.
2. Specification year book.
3. P.W.D. Hand book.
4. B. N. DUTTA, "Estimating and costing in civil Engineering", U.B.S. Pub.
5. M. Chakraborti, "Estimating and costing in Civil Engineering", "Bhaktivedanta Book Trust, Sreemayapor.
6. RANGWALA, "Estimating & Costing", Charotar Pub. house.
7. NAMAVATI, "Professional Practice", Lakhani Book Depot.
8. C.P.W.D. Hand book.

SEMESTER – VI

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
5	**TB-3720 PB- 30726**	Professional Practice	2	2	04	50	30	**80**	03	03		50	**50**	**130**	*02*	*05*

AIM: The objective of this subject is to equip the students with sufficient knowledge of professional practice, code of conduct and ethics. Along with the students shall be well equipped with the knowledge of valuation and arbitration

Course Contents:

Unit I

1. Introduction to Architectural Profession, Role of Professional Bodies, the Architects Registration Act, 1972.
2. The duties, liabilities and relationships of client, contractor and other technicians. The code of professional conducts and conditions of engagement of Architects. Scale of remuneration for Architectural services and mode of payments.

Unit II

2. Types of tenders, tendering process, Execution of contract, Problems in operation of contract.

Unit III

4. Architectural competitions, office organisation, administration & management, documentation & maintenance of accounts, Arbitration, Easement and laws relating works, Dilapidation and waste.
5. Office organization and administration, nature of partnership, registration and dissolution of firms. Statutory obligations, office managements, filing of documents and drawings, accounts and audits, staff personals, their salaries, incentives etc.

Unit IV

1. Valuation: Importance of valuation for rental, income/wealth tax, selling/ purchasing. Values, sinking fund, capitalized cost year purchase, methods of depreciation and valuation tables Mortgage/ lease, fixation of rent of private/ Govt., residential, commercial buildings etc. Different methods of valuation. Valuation reports, duties and responsibilities as registered government valuer

Unit V

2. Arbitration: Role and qualities of an arbitrator. Arbitration act-1940 with amendment till date Arbitration with reference to competitions, valuation, contract, land disputes and legal implications.

Note: The students shall prepare the presentation on these topics and present on ppt.

LIST OF TEXT AND REFERENCE BOOKS:

3721 - PROFESSIONAL PRACTICE

1. Hand book on professional practice by council of architecture, New Delhi

2. Hand book on professional practice by Indian Institute of Architecture
3. BPMC Act
4. GTP and GDCR rules
5. Professional practice with Elements of Estimating, Valuation contract and
6. Arbitration By Dr. Roshan H. Namavati
7. Estimating and costing in Civil Engineering Theory and Practice by B.N. Datta

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THIRD YEAR - SIXTH SEMESTER

SEMESTER – VI

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
6	**TB-3721 PB- 30727**	Project Management & Building Economics	2	2	04	50	30	**80**	02	03	-	40	**40**	**120**	02	04

AIM: This course deals with the entire gamut of activities concerned, with the implementation process of building works subsequent to the preparation of the construction schedule. The sequence shall begin with the framing of work priorities and progressively lead to concepts of scheduling, construction management and project planning and building economics.

Course Contents:

SECTION-A: PROJECT MANAGEMENT:

UNIT I

- Introduction: Introduction to project management concepts, objectives, goals and different aspects of management, traditional management systems, Gantt's approach, bar charts, project programming, time estimate etc.
- Project programming, resource balancing, phasing of activities, programme scheduling, project control, reviewing, updating and monitoring, modern management concepts.

Unit II

- Project assessment and project cost, job size, divisions of responsibilities, liaison with owners and their representatives, feasibility study, project report, construction financing facilities etc.
- Construction Management: Conditions of contract, their applications, quality and quantity controls, time and cash contract recording, checking and certifying with coordination of all building activities.

Unit III

- Project Monitoring: C.P.M. , P.E.R.T. & other uni-dimensional techniques for project planning, scheduling and control.

SECTION-A: BUILDING ECONOMICS

Unit IV

1. Introduction: Broad features of Indian economy, economic significance, features in development plans, Macroeconomic concepts & their application, Money & Banking functions, factors of production such as land, labour, building industries and money and management etc.
2. Land Economics: Land as a limited resource, demand for land development and need for its conversation, public policies for land utilization and land development, theories of land values, land acts & problems in land acquisition & land development programme etc.

Unit V

3. Building Economics: Building efficiency and cost reduction through planning, design of building components, use of new materials and Innovative construction etc. rent & other building acts, economics of high rise buildings etc.

Optimization of cost or affordable cost through various measures has become an important issue since prices escalate fast. The course aims to make aware about the issues/methods involved.

LIST OF TEXT AND REFERENCE BOOKS:

3722 - PROJECT MANAGEMENT & BUILDING ECONOMICS

1. Architectural programming, Kumlin, Robert R.
2. The architect's guide to programming, Palmer Mickey A.
3. The impact of the client organization on the programming process, Faberstein,Jay (Edited by Wolfgang Preiser, Van Nostrand Reinhold)
4. Architectural programming: Information Management for Design Duerk, Donna P. (Van Nostrand Reinhold)
5. Behavioral Research Methods in Environmental Design Michaelsin, William Hutchinson Ross)
6. Problem seeking: An Architectural Programming primer Pena, William M. (AIA Press)
7. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
8. 2. N. Gregory Mankiw. *Macroeconomics,* Worth Publishers, 7th edition, 2010.
9. Dornbusch, Fischer *Macroeconomics*, McGraw Hill, 6th edition
10. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.

FOURTH YEAR – SEVENTH SEMESTER

SEMESTER – VII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	**TB-4711 PB- 70717**	Design-VII	3	7	10	100	50	**150**	03	24	50	100	**150**	**300**	*07*	*10*

Aim: The aims of the course is to emphasize and evolve the methodology for architectural design with reference to the previous knowledge of functional aesthetics as well as present and future scenario of urban and rural development, their problems and prospects.

Course content:

- Design with application of principles and theory of urban design, urban and regional planning aspects and philosophies of contemporary architects.
- The attempt is towards developing ones own language and philosophy of architect on guide towards exploring alternative building forms for different activities which help in understanding the relationship of structure and possibilities in building forms.
- Design of cost effective, sustainable structures for various economic and social groups to solve problem of efficient housing in urban India, post disaster rehabilitation & earth quake resistant structures, etc
- Emphasis on consideration of advanced construction materials and techniques with RCC framed structure, Steel structure for large span buildings, and use of lightweight prefabricated panels and other etc
- Details of services like sanitary, water supply, electrical and mechanical, acoustics, fire fighting, parking etc
- Detailed Site planning of the scheme with the details of landscaping and site agglomeration
- Design under the framework of existing local zoning regulations and other relevant Building codes.

Design problems:

- Design of large housing schemes and neighborhood planning etc with emphasis on above parameters
- Design of multistoried commercial complex, specialized market, five star hotels, motels, shopping malls, multiplexes, etc
- Design of universities, institutional campus, multistoried office buildings, town planning schemes, public buildings, Computer centers, IT Parks, and other infrastructure
- Design of conference halls, science museums, sports complex etc
- Design of specialized hospitals/ college campus and other medical facilities

Design approach:

The literature survey & data collection is necessary. There should be regular site visits to buildings dealt in studio problems. Documentation should be done with the help of photographs, slides, video etc.

There should be minimum one time problem of 24 hrs. Duration apart from min. two regular design problems in the studio

Note: The sessionals will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate review consisting of internal and external experts. There should be regular site visits to the building types dealt in the studio problems of which audio-visual should be prepared.

LIST OF TEXT AND REFERENCE BOOKS:

4711 - DESIGN-VII

1. FRANCIS D.K. CHING, "Form, Space and Order", Van Nosttrand Reinhold Co. Canada.
2. FRANCIS D.K. CHING, "Architectural Graphics".
3. National Building Code
4. D.E. CHIRAIRA & CALLENDAR, "Times Saver Standard for Building Types"
5. Neufert Data Standards Ernst Neufert Archon Books
6. MAITLAND, GRAVES, "The Art of Color in Design", McGraw Hill Book Co. 1951.
7. Rendering with pen and ink by Gill, Robert
8. EDWARD D. MILLS, "Planning, the Architects Handbook", Butterworth, London 1905.
9. Architecture: Scale and proportion by Eugene Ruskin
10. Architectural Graphic Standard by Ramsay and Sleeper.
11. V.S. PARMAR, "Design Fundamentals in Architecture", Somayya Publications Pvt. New Delhi 1973.
12. SCOTT. "Design Fundamentals"
13. G. BROND BENT, "Design in Architecture"
14. Architectural Rendering the techniques of contemporary presentation by Albert o Halse
15. Building Drawing Shah, Kale, Patki Tata Mcgraw Hill Publishing
16. Christopher Alexander, "A pattern Language", Oxford University press, New York 1977
17. Leuris (S), Front to back: "A Design Agenda for Urban Housing", Architectural Press, 2006.
18. Mohanty. L.N.P., Mohanty. S, "Slum in India" APH Publications., 2005
19. Saxena A. K. , "Sociological Dimensions of Urban Housing and Development ", Commonwealth Publications, 2004
20. Geol. S. L. Dhaliwal. S. S. "Slum improvement through participatory Urban based Communitystructures", Deep & Deep Publications, 2004.

FOURTH YEAR – SEVENTH SEMESTER

SEMESTER – VII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]			Credit	Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block			End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
2	**TB-4712 PB- 70718**	Urban Design	3	4	07	50	30	**80**	03	03	50	70	**120**	**200**	*04*	*07*

Aim: The objective is to develop an understanding of Urban Design through their evolution in history and it being an integral part of the architecture at bigger level. It is seen as a course that addresses issues of urban environment and sustainability. The studio will also look at the further development of the first term architectural design project in urban peripheries context to understand the overall impact of architecture..

Course content:

Unit I

- Definition of Urban Design, scope of urban design in Indian context and its integration with urban planning.
- Historical development and approaches to Urban Design, spatial design, classical, functional, ornamental etc. space orders.

Unit II

- Urban form and its elements, visual order of forms, sequence, scale, visual space dynamics. Various surveys needed to document visual aspects of environments.
- Urban design concepts of Doxiadis, Sarinen, Kelvin Linch, Le Corbusier and others.

Unit III

- Urban structure and design rational inter- relationship economic activities, public organization, communication systems. Urban conservation and land use structure.

Unit IV

- Urban renewal and Gentrification.

Unit V

- Review and designing of urban renewal and redevelopment projects for old and new towns.

Note: Sessional will be in the form of drawings and reports on the study on any area, identification of the problem areas and proposals in the form of drawings for the same.

LIST OF TEXT AND REFERENCE BOOKS:

4712 - URBAN DESIGN

1. Architecture of Town & Cities, Paul Spreiregen
2. Image of the City, Kevin Lynch
3. Good City Form,, Kevin Lynch
4. Town & Squares, Paul Zucker
5. Pattern Language, Christopher Alexander

6. Life & Death of Great American Cities, Jane Jacobs
7. The Architecture of Towns and Cities, Paul D Spreiregin
8. Design of Cities, Edmund N Bacon,
9. Timeless Way of Building, Christopher Alexander
10. Pattern Language, Christopher Alexander
11. Human Aspects of Urban Form Amos Rapoport
12. Emerging concepts in Urban Space Design, Geoffrey Broadbent,

FOURTH YEAR – SEVENTH SEMESTER

SEMESTER – VII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
3	**TB-4713 PB- 70719**	Adv. Building Services-III	3	2	05	50	30	80	03	03	20	30	*50*	130	*02*	*05*

Aim: The aim of the course is to introduce the students about the aspects of acoustics and security systems in a building.

Course content:

SECTION – A

Unit I

Acoustics:

- Definition of sound. Fundamental characteristics of sound.
- Behavior of sound in enclosed spaces in general and few enclosed functional spaces in particular without involving much of mathematical complexity. Need to study acoustics.

Unit II

- Development of this science through different periods. Pioneers and their works.
- Properties of sound, its origin propagation and sensation. Behavior of sound with respect to various surfaces, openings and in an enclosed space.
- Study of various sound absorbing materials, single and in combination of various frequencies of sound, panel absorbers, porous materials and cavity resonators.

Unit III

- Reverberation time, Sabine's formula. Criteria for acoustics environment for reverberation in spaces.
- Sound application systems. Constructional and planning measures for good acoustical design.
- Acoustical defects and remedies. Sound application systems. Case studies for the above aspects.

Unit IV

- Noise and its on man. Physiological and psychological principles of noise control including acoustic lent insulation for various domestic services and industrial fitting and constructions. Structure borne and air borne noise, their effects and control.

SECTION – B

Unit V

Security Systems:

- Types of security systems and their working.
- Apparatus and system of alarms.

- Firefighting equipments, fire fighting bye-laws governing various types of public buildings, fire escape, fire safety in high rise buildings.

Note: Sessional shall be prepared in the form of notes and calculations, drawings etc. as per above topics.

LIST OF TEXT AND REFERENCE BOOKS:

4713 - Advanced Building Services III:

1. R.G.EDKIE, "Architectural Acoustics & illumination", EKWEERA PRAKASHAN, NAGPUR - 12
2. SIRASKAR, "Acoustics in Building Design"
3. S.OMEN & B. J. SMITH, "Acoustics & Noise Control"
4. T.S.S - Design data.
5. Otto Koeingnsberger, "Manual of Tropical Climate", Orient longman.
6. E. J. RICHARDSON, "Acoustics for Architecture".
7. J.E. MOORE, "Design for good acoustics".
8. VERN O KNUDSEN, CYRIL M.HARRIS ", Architectural Acoustics ", John Wiley & Sons.

FOURTH YEAR – SEVENTH SEMESTER

SEMESTER – VII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]			Credit	Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block			End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
4	**TB-4714 PB- 70720**	Elective -I	3	2	05	50	30	**80**	03	03	-	50	**50**	**130**	*02*	*05*

Elective I-(Any Two): 1. Interior Design 2. Sustainable Architecture 3. Disaster Management & Earthquake Resistant Structures
4.Intelligent Building Systems 5. Architectural journalism 6. GIS & Remote sensing

[*Note: Student will have an option to select any two electives at a time, Credits will be divided accordingly in two parts.]

Course Content:

1. **INTERIOR DESIGN**
    1. Understanding the need for design of interiors. Effect of build spaces/interior spaces on human psyche. Historical background of interior design and international perspective.
    2. Interior space character, classification categories and quality. Elements of interior space. The built environment, the living interiors in today's context.
    3. Space, form, colour, abstract, spatial expression. The base lane, the overhead plane, the verticals, the intermediates. Visual aspects, visual control, illusions. Visual art appreciation: A brief look of Major Art Movements that have affected design.
    4. Interior climate, orientation of interior space with respect to outdoor climatic forces. Outdoor climate study, study of micro climate. Spatial layout for best comfort in doors with respect to natural climate. Air movement, natural illumination, natural heating/cooling, artificial interior environment-artificial illumination, artificial climate, air conditioning etc.
    5. Elements of interior design: A study of the latest available, materials, furniture/fittings, past, present and future and international perspective. Water and plants in interior design. Drainage, plant species, plant care etc. Sound modulation in interior spaces. Practical examples and exercise for all the above.

Note: Design problems in interior design to bring out the originality, innovativeness, and the best of imagination from the students, preparation of scrap books.

LIST OF TEXT AND REFERENCE BOOKS: ELECTIVE – I (INTERIOR DESIGN)

- Human Dimension and Interior Space" by PaneroJulious&Zelink Martin
- "Design of Interior Environment" by Alexander and Mercourt.
- T.S.S. for Interior design.
- AHMED A. KASUR, "Interior Design", Iqura Pub.
- JOHN CULLEN, "The lighting handbook" Pelham Books

2. SUSTAINABLE ARCHITECTURE:

1) Introduction to the ideas, issues and concepts of sustainable Architecture, global environment and the built environment, principles of environmentally and ecologically supportive architecture
2) Study of sustainable architecture, use of energy, materials, health and global environment as related to the construction and operation of buildings
3) Sustainable and conservation practices -water conservation, sewerage treatment, solid waste treatment, economics and management
4) Low energy design, hybrid systems, modelling and simulation of energy systems, integration of PV and wind systems in the building,
5) wind solar and other non conventional energy systems, solar thermal applications for heating and cooling, electricity generation in buildings
6) Case studies on specific contemporary sustainable architecture.
7) Green Specification parameters, carbon credits.
8) Introduction to ECBC, GRIHA, LEEDS, etc., simulation techniques and their applications.

NOTE : The Sessional will be oriented towards live case studies and modelling

1. Brenda and Robert Vale; Green Architecture- Design for a Sustainable Future; Thames and Hudson; 1996
2. Daniel Vallero and Chris Brasier; Sustainable Design- The science of sustainability and
3. Green Engineering; Wiley; 2008
4. Catherine Slessor; Sustainable Architecture and High Technology- Eco Tech; Thames and Hudson; 1997
5. Dominique Gauzin- Muller; Sustainable architecture and Urbanism; Birkhauser; 2002.
6. Ken Yeang; Eco design - A Manual for Ecological design, Wiley- Academy; 2006
7. Sue Roaf et all; Ecohouse: A design Guide; Elsevier Architectural Press; 2007

3. DISASTER MANAGEMENT & EARTHQUAKE RESISTANT STRUCTURES

Aim: The objective is to develop an understanding of disaster and its management at pre and post disaster conditions, knowledge gained through the study of history of various types of disaster and their management. It is seen as a course that addresses issues of disaster and their management.

Course content:

1) Types of disaster, meanings and related definitions.
2) Causes and effects of natural hazards.
3) Disaster profile of India.
4) Disaster preparedness and response and rehabilitation.
5) Roles and responsibilities of different agencies.

Note: Sessional will be in the form of report on the above topics and prepare a report for disaster management for a given hypothetical / real site/ building.

1. "Manual of Tropical Housing & Building (Part-II)" Koenigsberger
2. "Housing Climate and Comfort" by Martin Evans
3. "Buildings in the tropics" by Maxwell fry
4. "Climate Responsive Architecture" by ArvindKishan, Baker &Szokolay
5. Norman Kormandy: "Environment and Ecology

4. INTELLIGENT BUILDINGS:

1) Introduction & Origins of the Intelligent Building Concept:

a. Definition and characteristics of Intelligent Buildings, A brief history of the Development of I.B. Concept through recent times highlighting.
b. Automated buildings (1981-1985)

c. Responsive buildings (1986-1991)
d. Effective Buildings (1992-1997)

2) Study of Concepts of Building Management (facility management), Effective Space Management, Business management and the various models of Building Intelligence.
3) Technology Evolution and the IT market place: Present technological context, Exploration of user IT systems, IT demands on building and services, Building Control systems, study of development of Computer Integrated Building from single function systems to integrated solutions.
4) Key Issues for Intelligent Buildings: Multiple activity settings, Generic analysis of space utilization, Models for shared space use. The development of briefing process including design activity and building element life- cycles, the match between organizational requirements and building technologies, A brief study related to Site issues, Shell issues, Skin issues, Building services and technology issues.
5) Managing the Building: Study and importance of facility management planning & operation techniques.
6) Intelligent Design & Construction: Client expectations, use of IT for effective communication of architectural ideas to clients, locating people and information, introduction to building efficiency studies with respect to life cycle costs.

NOTE:There will be study assignments given to students on various Units.

LIST OF TEXT AND REFERENCE BOOKS: ELECTIVE – I (INTELLEGENT BUILDINGS)

1. Payne, F. William, "Strategies for energy efficient Plants and intelligent buildings" Fairmont Press, USA, Distributor Prentice Hall India, New Delhi.

5. ARCHITECTURAL JOURNALISM

1) Journalism in general
2) Theories of journalism
3) Techniques and processes
4) Contemporary Architectural journalism
5) Digital Journalism
6) Architecture, Arts and Journalism / Media
7) Cinematography
8) Profile writing (Corporate to Individual)
9) Critical appraisal of Technical, Literature, Visual and Media.
10) Photo Journalism.

Note: There will be study assignments given to students on the above mentioned course.

6. GIS & REMOTE SENSING

- Basic remote sensing, platform, sensors, and introduction to sensors, basic principal & methods of photo interpretation and techniques of data collection through satellite data. Classification techniques using satellite data
- Digital image processing, enhancement techniques in urban information extraction
- Aerial photography as a tool for collection of data and preparation of maps, its application in planning and preparation for a project, orientation concept and methodology transformation and adjustment techniques.
- Experiments in lab, Instruction for making overlays
- Computation of photo scale
- Orientation of a stereo pair under a mirror stereoscope
- Recognition on aerial photograph of objects indicated on ground photographs

- Detection of defined objects, Description and identification of objects
- Use of auxiliary features for object identification
- Systematic scanning of a photograph, and object identification
- Identification of land use with a given classification
- Monitoring urban changes, Mosaic preparation
- Base map preparation & elementary data analysis using satellite data
- Experiments in lab, Instruction for making overlays
- Classification preparation
- Interpretation & delineation of various land use on satellite data products
- GIS techniques and their application in planning field

NOTE: Sessional work shall consist of term paper, small project formulation using satellite data and analytical report preparation through GIS, seminars

1. Lillesand, T.M., Kiefer, R.W. and J.W.Chipman. (2004). Remote Sensing and Image Interpretation. V Edn. John Willey and Sons (Asia) Pvt. Ltd., New Delhi. Pp:763.
2. Anji Reddy, M. (2001). Textbook of Remote Sensing and Geographical Information System. Second edn. BS Publications, Hyderabad

7. Environment & Architecture

Environment is everybody's business. It has been observed that many individuals, who have the benefit of education and are actively engaged in their professions, often have strong desire to educate themselves on environmental matters. They also want to play a significant role in environmental management of their neighborhood. Sometimes, due to misinformation or availability of excessive information on a subject, these individuals despite their enlightened background, are not in a position to appreciate significant environmental issues. They are also sometimes misled by adverse propaganda. Owing to these reasons, the Appreciation Course on Environment (ACE) has been developed by the University in collaboration with the Ministry of Environment and Forests, Govt. of India, as a non-credit awareness course.

The objectives of this course are to:

- Disseminate information on national and international environmental issues.
- Create environmental consciousness among professionals, academicians and other members of society who can play an active part in opinion making within the society so that corrective environmental action could be encouraged; and
- Facilitate development of environmental leadership among individuals who may organize/ participate in environment up gradation programmes.

FOURTH YEAR – SEVENTH SEMESTER

SEMESTER – VII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
5	**TB-4715 PB- 70721**	Town Planning	3	3	06	50	30	**80**	03	03	-	40	**40**	**120**	*03*	*06*

Aim: The objective of the course is to investigate urban networks and processes. This course requires taking up an area level study and proceed to formulate design guidelines on the issues.

Course content:

Unit I Basic components of urban areas and regions.

Unit II Role of urban & regional planning at national level, metro level concepts. Basic planning, settlements, theories, models etc.

Unit III Socio – cultural and land use planning, general principles, survey techniques, utopian thoughts, models for planning and their relevance in Indian context.

Unit IV Planning norms and development norms for urban and regional approaches, techniques of development for existing areas and renewal schemes, conservation and development.

Unit V Transportation modes, planning and development survey techniques etc. Review of regional plans.

Note: Sessional will include the report on case studies based on data collection, surveys and other empirical evidences and its presentation in the form of seminars.

LIST OF TEXT AND REFERENCE BOOKS:

4715- TOWN PLANNING

1. V.K. BHEDASGAONKAR, " Handbook of Town Planning", Amar Mudranalaya.
2. G.K.HIRASKAR, "Fundamentals of Town Planning", Dhanpt Rai & Sons.
3. PATRICK ABERCROMBIE, "Town and Country Planning", Oxford univ. Press.
4. KEEBLE, "Principles and Practice of Town and Country Planning".
5. S.C. RANGWALA, "Town Planning", Charotar Publishing House.
6. BANDYOPADHYAY, ABIR ,"A Text Book of Town Planning " , New Central Book Agency, Calcutta.

FOURTH YEAR – SEVENTH SEMESTER

SEMESTER – VII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
6	**TB-PB- 70722**	Dissertation	-	3	03	-	- -	-	-	_	50	70	**120**	**120**	*03*	*03*

AIM: Objective of subject Dissertation is to enlighten students on the fundamentals of Research methods before attempting Eighth Semester Thesis Project.
Basics of research to be understood by the students are:
• Basic research principles and research methods.
• Report writing skills
Dissertation will be part of Thesis Project (A 421) to be further carried and completed in VIII semester.

Course Content:

- First phase of dissertation allows students to identify the broad area / field of Architecture of their interest in which they may intend to do the research. This is to be done by studying and reproducing the brief of technical papers in the form of report review.
- Second phase allows the students to do the study of sample example of research already done by choosing the specific aspect / area relevant to broader field they have selected in first phase. This exercise involves the writing of report / review of book / journal dedicated to that specific aspect or area. This review writing is aimed to understand the method of collecting data (survey methods), analysis of data (statistics and mathematical formulas), drawing inferences and conclusion as attempted by the author of the book.
- Third phase is the writing of detailed dissertation report. Students are expected to choose their own topic of research by referring the area / field already identified in other two phases.

NOTE: Sessionals will be submitted in the form of review reports and Dissertation report.

LIST OF TEXT AND REFERENCE BOOKS:

4716 - Dissertation

- Instruction Manuals on report writing.
- Student have to finalize the Thesis Design Topics/ Guides

FOURTH YEAR – EIGHT SEMESTER

SEMESTER -VIII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST/ Quiz Assignment	Total theory block			End Sem	Term work/ Sessional/ Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	**TB-4716 PB- 70723**	Design-VIII	3	7	10	100	50	**150**	03	06	50	100	**150**	**300**	07	10

Objective:

The objectives of this studio are twofold. The first objective is to expose the students to the challenges of designing functionally complicated buildings, having a complex array of activities and services; The second objective is to familiarise the students to the task of coordinating integration of structural design and specialised building services in the framework of architectural design. The third objective is to let the students understand advanced construction technology and newer building materials. Emphasis will be on preparation of design programme, preparation of drawings and detailing.

Course Content:

The focus of the studio is on functionality and integration of advanced technology and services. The studio enables understanding the complex mechanisms of designing services intensive buildings in tight urban context, having multiple levels (above and/or underground). The special emphases are on utilitarian parameters, space optimisation, conformance with regulatory requirements, integration of structural systems and building services (HVAC, fire, electrical, communication, plumbing etc.) in architectural layout and construction technology. The studio encourages the students to explore modern automation and intelligent systems for building management and energy conservation. They will learn about site planning and landscaping in tight spatial context. Studio Project: Emphasis on the design of services intensive, multi-storeyed, buildings in tight urban spatial context, such as buildings for health care, hospitality institutional or multifunctional commercial usage. Design focuses on closed environment, with emphases on interior spaces, integration of various services, and conformance with regulatory norms. The external environment to take into consideration circulation of emergency vehicles and parking optimization.

References:

1. Baiche, B. and Walliman, N. (2012). Neufert Architects Data, 4th Ed. Oxford : Wiley-Blackwell.

2. Chiara, J. D. and Michael, J. C. 2001. Time Savers Standards for Building Types. Singapore : McGraw Hill Professional.

3. Gauzin-Muller, D. (2002). Sustainable Architecture and Urbanism: Concepts, Technologies, Examples. 1 st Ed. Basel : BirkhauserVerlag AG.

4. Huxtable, A-L. (1984). Tall Buildings Artistically Reconsidered.

5. Kloft, E. and Johann, E. (2003). High-rise Manual: Typology and Design, Construction and Technology, 1st Ed. Basel : Birkhauser Verlag AG.

6. Markus, K., Rollbacher, R., Herrmann, E., Wietzorrek, U. and Ebner, P. (2009). Typology+: Innovative Residential Architecture. Basel : BirkhauserVerlag AG.

7. Parker, D. And Wood, A. (2013). The Tall Buildings Reference Book. New York : Routledge.

8. Wood, A. and Ruba, S. (2012). Guide to Natural Ventilation in High Rise Office Buildings. New York : Routledge.

Sessional work: will include appropriate exercises on one or more of the above mentioned aspects followed by at least 2 to 3 design problems arranged in a sequence of complexity and as a problem solving approach.

Site visits audio, visual presentation and library reference is emphasized.

Design problem will be like:

a) Public buildings: Theatre, museum, auditorium, recreation, complexes, stadium, etc.

b) High rise apartment, offices, hospitals, laboratories, campuses etc.

c) Urban design level problems such as commercial complexes, group housing, area development etc

SEMESTER -VIII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST/ Quiz Assignment	Total theory block			End Sem	Term work/ Sessional/ Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
2	**TB-4717 PB- 70724**	Advanced Construction Techniques	3	4	7	50	50	**100**	03	03	50	50	**100**	**200**	04	7

OBJECTIVE

To make the students learn about all the aspects of advanced building construction techniques.

CONTENTS

UNIT I (Time- six weeks)

Introduction to new structural forms and methods of their execution such as form work required• for execution of shell structures, Pneumatic Structure, geodesic domes, space steel frames etc. Introduction to types of special slabs like Filler slab, waffle, coffer and flat slabs.• Introduction to shell• & folded plate.

UNIT II (Time-six weeks) Design and Details of roof gardens.• Detailing of Curtain walls, triple glazing windows.• Introduction to high tech building materials like structural glazing, vitreous tiles, artificial veneers,• aluminum composite panels etc. Advanced building finishes.•

UNIT IIl (Time-four weeks) Introduction to cost effective and environmentally friendly building materials such as Stabilized• mud blocks, Hollow concrete blocks, Aerated concrete blocks, Fly ash bricks, eco boards, husk boards etc. Prestressed Concrete Structures: Introduction, method of pre – stressing, losses of prestress• designing of rectangular beams. Introduction of Prefabrication- Advantages and disadvantages of on-site and off-site• prefabrication; Prefabrication in Indian construction industry. Emerging trends in building materials and recent advances in concrete technology.

NOTE

Site Visits to ongoing construction project/s and modern buildings.

Market survey of building materials and visits to building materials industries.

• REFERENCE BOOKS

"Steel Structure and Architecture", Arne Petter Eggen, Bjørn Normann Sandaker, Whitney Library of Design, 1995.

"Structural Analysis and Design of Tall buildings",Bungale S. Taranath, CRC Press, Florida, 2012.

- "Handbook of Designing and Installation of services in Building complex", Highrise Buildings,
- V.K.Jain, Khanna Tech., 1990. "Building Structures", James Ambrose, Patrick Tripeny, John Wiley & Sons, 2011.

"Handbook of Building Construction" Vol-1•&2, MM Goyal, Thomson Press, 2006.

SEMESTER -VIII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block			End Sem	Term work/ Sessional Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
3	**TB-4718 PB- 70725**	Acoustics and Illumination	3	2	05	50	30	**80**	03	03	-	50	**50**	**130**	02	5

Objectives: Study of this subject will make students realize the importance of acoustics in interior spaces and necessity of manipulating acoustical environment in buildings. And also to impart knowledge of basic illumination design & illumination system for the indoor spaces.

Acoustics

Unit I: Frequency range of audible sounds. Propagation of sound, sound reflection, diffusion, diffraction. Sound Isolation, Mass law, Transmission loss, STC rating, TL for single and double walls sound leaks and flanking.

Unit II: Acoustical Material and interior finishes, Sound absorbing materials & their properties. Constructional and planning measures for good acoustical design of building in general, Acoustical treatment of Auditorium / Lecture Halls / Conference hall. Illumination

Unit III: Light radiation, its units, Laws of illumination, inverse square law and cosine law. Artificial light calculation by Lumen Method. Light sources, various types of Lamps and their characteristics.

Unit IV: Types of lighting systems, task lighting, accent lighting, general lighting, lighting for mood etc. Luminaries, their types , properties and uses.

Reference Books:

Acoustics In Building Design by K.A. Siraskar.

Architectural Acoustics by David Egan.

Auditorium Acoustics and Architectural Design by M. Barron.

Sessional Work : Notes & problems based on acoustical design theory, tutorials, Sketches. Survey of various sound insulating materials for interior elements. Survey of various lighting fixtures.

SEMESTER -VIII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total		Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block			End Sem	Term work/ Sessional Continuous assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
4	**TB-4719 PB- 70726**	Landscape Design	3	1	04	50	30	**80**	03	03	-	50	**50**	**130**	01	04

OBJECTIVE

This course is aimed at providing a comprehensive knowledge regarding ecological aspects and environmental concerns in landscape design besides the advanced knowledge of basic elements of landscape design.

CONTENTS

UNIT l

Introduction to the elements of landscape such as Earth form, Water and Vegetation and their effect in relation to the built environment. Plant types, characteristics, structure and color of foliage.

UNIT II

History, nature and scope Purpose of designed open space. Exposure to historical landscape (English, French, Italian, Chinese, Japanese, Mughal, Ancient(India) and their relevance in their time, context and social needs. Introduction to ecology and its importance to Landscape designers.

UNIT III

Site analysis and site structure unity.

Advanced knowledge of basic elements of Landscape Design and their effects in context to the

environmental concerns Basic knowledge of contour/mapping and various methods of documentation of physical features,

topography and landscape elements.

UNIT IV

Case studies of varied urban situations with typical different landscape characters in Chandigarh, Delhi region to analyze and assess their present landscape status by applying knowledge and techniques acquired as above. Landscape design proposal based on above mentioned analysis as a studio exercise.

NOTE

The time mentioned at the end of each of the above units indicates the tentative time taken to complete each. The marks for sessional work may be divided accordingly.

REFERENCE BOOKS

- "Time-saver standards for landscape architecture: design and construction data", Nicholas T.
- Dines, Kyle D. Brown; McGraw-Hill, 1998 "Landscape design: a practical approach", Leroy G. Hannebaum; Reston Pub. Co., 1981
- "Landscape design: an international survey", Ken Fieldhouse; Overlook Press, 1993
- Landscape Detailing, Micheal Littlewood; Routledge, 2001
- "Planting Design", Theodore D. Walker; John Wiley
- & Sons, 1991 "Landscape Architecture Construction", Harlow C. Landphair, Fred Klatt; Prentice Hall PTR, 1999
- "Landscape As Inspiration", Hans Dieter Schaal; Academy Editions, 1994
- "Introduction to Landscape Design", John L. Motloch; John Wiley
- & Sons, 2000 "Landscape Architecture: A Manual of Site Planning and Design", John Ormsbee Simonds; McGraw
- Hill Professional, 1998 "Trees of Chandigarh", Chhatar Singh, Rajnish Wattas, Harjit Singh Dhillon; B.R. Publishing

SEMESTER -VIII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks										Grand Total	Credit	Total Credits
						Theory Block [TB]					Theory Exam Duration (Hrs.)	Practical Block[PB]						
						End Sem exam	MST	Quiz Assignment	Total theory block	Credit		End Sem	Term work / Session al	Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I						II				I+II		
5	**TB-4720 PB- 70727**	Energy Efficient Buildings	3	2	05	50	30		***80***	**3**	03		-	30	30	**110**	**2**	5

The energy crisis and the need for energy efficiency. Passive heating concepts. Passive cooling concepts. Passive heating & cooling concepts.

Natural ventilation in buildings as aa low energy cooling strategy. Classification and functions of ventilation. Factors to be considered for integrating Natural Ventilation in Building Design. Wind speed-technique of terrain and height correction. Calculation of Air Flow through Openings (due to Wind Pressure) and calculation of probable wind speed indoors as recommended by Bureau of Indian Standards. Wind speeds and thermal comfort

Factors that affect energy use in buildings - functional factors, environmental factors, envelope factors, air-conditioning systems factors, energy source factors and electrical systems factors. Introduction to the Energy Conservation Building Code (ECBC)

Introduction to Energy Management of Buildings and Energy Audit of Buildings. The aims and main aspects of Energy Management of Buildings. Energy Audit & conducting the Energy Audit. Energy Management Matrix. Monitoring and Targetting.

Modification of microclimate through landscape elements for energy conservation. Energy conservation through site selection, siting & orientation. Energy conservation through integration of building and site, site planning & site design.

REFERENCES

1. Wayne Forster and Dean Hawkes, “Energy Efficient Buildings: Architecture, Engineering, and Environment”. W.W. Norton Company Inc. 2002.

2. MiliMajumdar, “Energy-Efficient Buildings in India”, The Energy and Resources Institute (TERI), 2009.

3. SatyajitGhosh and Abhinav Dhaka, “Green Structures: Energy Efficient Buildings, CRS Press (Taylor & Francis Group), 2015.

4. Bureau of Energy Efficiency, India. Energy Conservation Building Code, 2006.

5. Bureau of Energy Efficiency, India. Design Guidelines for Energy Efficient MultiStorey Buildings, 2014.

SEMESTER -VIII

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks									Grand Total	Credit	Total Credits
						Theory Block [TB]					Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST	Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional	Continuous Assessment	Total Practical block		
			L	STUDIO / T	Total Contact Hour	I						II				I+II	
6	**TB-4721 PB- 70728**	Elective -II	3	2	05	50	30		80	***3***	03		50		50	130	***2***	**5**

6A) ENVIRONMENTAL SCIENCE FOR ARCHITECTURE

UNIT 1

Definition, Scope and Importance, need for public's awareness, - Environment Definition, Eco System, balanced Eco System, Human Activities- Food Shelter, Economic & Social

Effect of human activities on environment Agriculture, Housing, Industry, Mining, and transportation activities, Basics of Environmental Impact Assessment, Sustainable Development

UNIT II

Natural Resources- Water Resources Availability and quality aspect's, Water Bourne Diseases, Water Induced Diseases, Fluoride Problem in Drinking Water, Mineral resources, Forest Health, Material Cycle-C,N & S cycles.

Energy: Different type of energy, Electro-magnetic radiation conventional & Non- Conventional Sources – Hydro Electric, Fossil Fuel based, Nuclear, Solar, Biomass & Bio Gas, Hydrogen as an Alternative source of energy.

UNIT III

Environmental Population and their Effects: -Water pollution, land pollution, Noise Pollution, Public Health Aspects, Air pollution, Solid Waste Management

Current Environmental Issues of Importance: Population Growth, Climate Change and Global Worming- Effects, Urbanization, Automobile pollution

Acid Rain, Ozone Layer depletion, Animal Husbandry.

UNIT IV

Environmental Protection – Role of Government, Legal Aspects, Initiates by Non- Governmental Organizations, Environmental Education, Women Education

Text Books:

1. Environmental Studies – Benny Joseph- TATA McgrawHill, 2005

2. Environmental Studies- Dr. D.L. Manjunath, Pearson Education, 2006

3. Environmental Studies- R. Rajagopalan- Oxford Publication, 2005

4. Text book of Environmental Science & Technology- M. Anji Reddy- BS Publication

Reference Books:

1. Principle of Environmental Science and Engg- P. Venugopalan Rao, Practice Hall
2. Principle of Environmental Science and Engg- Meenakshi, Practice Hall

6B) HUMAN SETTLEMENT PLANNING

Objectives: The study aims at introducing students to the development of planning thought from that of historic to present age. It also gives emphasis on stressing broad principles of settlement in such period. The study of this subject continues with emphasis on planning philosophies and the student to carry out the further studies in the specialized field of Urban Planning.

Unit I: Man's role in designing and developing the towns and cities from ancient times through Medieval, Renaissance and Industrial revolution to present day development.

Unit II : Town planning in India, Pre-historic, Vedic, Pre- British and British Planning in India, Planning after independence.

Unit III: Pioneers and their works, Planning concepts of Patric Geddes, Ebnezer Howard, Abereronmbie, Le-corbusier, C. A. Parry, Clarence Stein, Doxiadis, Kevin Lynch, F.L. Wright, Lewis Mumford, Rob Krier and Victor Gruen.

Unit IV : Present concept of planning at various levels, Planning as a team work, Role of Architects/ Planners in a team , Importance and methodologies of surveys in the planning process, Factors governing the location and growth of towns.

Unit V : Understanding the process of development plan making, general ideas of implementation of such plans and planning agencies, study of planning legislation and administration, town and regional planning acts., M.R.T.P Act., Development control rules, zoning, density, height, FSI Structures, Role of local and planning authorities.

Unit VI : Introduction to the problem of urban and rural housing in India, Analysis of deman and supply, General study of Planning consideration of housing and area development and housing infrastructure such as utilities and servies.

Sessional works : Notes and Seminar of above topics, Critical appraisal of existing proposed housing schemes, planning exercise of residential community.

Reference books :

Fundamentals of Town Planning by G.K.Hiraskar, Danpatrai & Sons.

Town Planning by S.C.Rangwala and K.S.Rangwala

Town Planning by Abir Bandhopadhaya, Books and Allied (P) Ltd.,

Urban Pattern City Planning and Design by Gallion and Eisher.

Sessional work :- Sketchess, assignments & tests.

6C) VERNACULAR ARCHITECTURE

Unit 1

Vernacular architecture - introduction - factors contributed to its evolution with examples. The advantages of studying it and possible application today.

Unit-2

Vernacular architecture – around the world -factors that contributed to their evolution. Few examples

Unit-3

Vernacular architecture in India - Factors that contributed to its evolution. Few examples

Vernacular architecture of Tamil Nadu - factors that contributed to its evolution. Few examples;

Unit-4

Settlement planning strategies, Regional and occupation wise variation.

Unit-5

Influence on modern architecture, examples from the works of Frank Lloyd Wright, Green Broken &HasanFathy, GeofferyBawa.

Possible applications of vernacular architectural techniques today.

REFERENCES

1. Oliver, Paul, "Encyclopedia of vernacular Architecture of the world (3 Vol. Set)", Cambridge University Press, U.K., 1997. 51 51 2. Tipnis, Aishwarya,
2. "Vernacular traditions: contemporary architecture", TERI publications, India, 2012.

6D) BARRIER FREE ENVIRONMENT

Unit-1

Barrier Free Design – need &concerns; Definition and dimensions of Barrier – physical, psychological and social. Types of Disability; Approaches towards Disability a Medical Model and Social Model.

Unit-2

Universal Design - principles and aspects; Study of Human - environment interaction system.

History of development of barrier free initiatives taken across the globe.

Unit-3

Norms and standards for barrier free design.

Unit-4

Design elements within buildings, site planning, parking, approach to plinth levels, corridors, entrance and exit, windows, stairways, lifts, toilets, signage, guiding and warning systems, floor materials.

Unit-5

Design elements outside the building – kerb at footpath, road crossing, public toilet, bust stop, toilet booth, signage. Provision in residential building, auditorium, parks, restaurants, railway station.

Unit-6

Constitutional and statutory provisions to implement barrier free design; barrier free transportation; barrier free tourism; access audit and design solution to one building.

REFERENCES

1. Accessibility for disabled – A design manual for a barrier free environment by united nation [available online] http://www.un.org/esa/socdev/enable/designm/index.html.

2. Bednar M. J., Barrier free Environments.

3. Harkness S., Building without Barriers for the Disable.

4. Manual on Barrier free Environment, CPWD.

5. The persons with disabilities (Equal opportunities, protection of rights and full participation) act. 1995.

INSTITUTE OF ARCHITECTURE & TOWN PLANNING, BUNDELKHAND UNIVERSITY, JHANSI-284128 (INDIA)

FIFTH YEAR – NINTH SEMESTER

SEMESTER – IX

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	**Practical Block[PB]**					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	5711	Practical training	-	-	-	-	- -	-	-		250	500	**750**	**750**	30	30

Practical training:

- The students' work will be evaluated through monthly progress report / diary in the end of each month under continuous Assessment. .
- Monthly progress report/diary, duly signed by the Architect, shall be submitted to the department, by the student up to 7th date of each month positively, online or in hard copy by post.
- The students' performance during the training shall be evaluated by a Jury at the end of the semester.
- The constitution of jury shall be - two external examiners, one Academician & one professional and two internal examiners, at least one shall be Professor or Head and training co-coordinator.
- Minimum duration of training for One Semester will be of 14 week.

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FIFTH YEAR – NINTH SEMESTER

SEMESTER – IX

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
2	5712	General Proficiency	-	-	-	-	-	-	-		250	-	**250**	**250**	06	06

General Proficiency:

The student shall prepare a report showing their performance in curricular and extracurricular activities during the course of studies from I Semester to X semester in chronological order and present the same before Examiners for evaluation.

FIFTH YEAR – TENTH SEMESTER

SEMESTER – X

S. No.	Course Code	Subjects	Period Per Week		Total Teaching Hours	Distribution of Marks								Grand Total	Credit	Total Credits
						Theory Block [TB]				Theory Exam Duration (Hrs.)	Practical Block[PB]					
						End Sem exam	MST Quiz Assignment	Total theory block	Credit		End Sem	Term work / Sessional Continuous Assessment	Total Practical block			
			L	STUDIO / T	Total Contact Hour	I					II			I+II		
1	5717	Thesis Project	-	18	18	-	- -	-	-		250	750	**1000**	**1000**	36	36

AIM: All the four years of learning architectural design and allied subjects culminate in design thesis project to motivate a student in investigative attitude individual methodology, thus to train in handling projects independently. The Architectural Thesis is the culmination of the development of the student's knowledge, attitudes and skills over the course of studies in architecture. It is an occasion for exercising conscious choices in the field, based on the student's personal abilities and inclinations, and for testing out his commitment.

Course Content:

Thesis Project:

Each student will select a subject of an architectural interest in consultation with the committee appointed by the Head / Principal of the Dept. /Institution. The subject will have to be approved at the beginning of the eighth semester. The evolution of the thesis project will be continuous and the student will have to give at least three seminars / submissions before the final submission. The thesis project shall be submitted in the form of bound report, drawings, models etc. in a manner as stipulated in THESIS MANUAL on the date prescribed by the Department.

The student, in consultation with the faculty, is expected to demonstrate through an imaginative approach, his expertise in effecting positive changes in our built environment.

Note: Architecture work programme and Architecture thesis manual shall be supplied by the department.

LIST OF TEXT AND REFERENCE BOOKS:

4717 - Thesis Project

1. "Planning by E. & O.E". Lliffe book Ltd., London.
2. D.E. CHIRAIRA & CALLENDAR, "Times Saver Standard for Building Types".
3. RUDOLF HERGE, "Nuferts Architects Data", Cross By Lockwod & Sons Ltd.
4. EDWARD D. MILLS, "Planning the Architects Hand Book".
5. National Building Code.
6. Thesis manual: SOA Publications (for private circulation only)
7. Instruction Manuals on report writing.
8. Relevant Books as per topic