

Teaching and Examination Scheme for B.Arch. (B.C.T.) (5 Year Course)

YEAR I

SEMESTER I

THEORY

S.No.	Code No.	Subjects	L	T/S	Exam. Hrs.	20% Mid Term Ass.	80% End Term Ass.	Total Marks
1.	1BC1	English	1	0	2	10	40	50
2.	1BC2	Mathematics	2	1	3	20	80	100
3.	1BC3	Construction Materials- I	2	1	3	20	80	100
4.	1BC4	Architectural Structures-I	2	1	3	20	80	100
		Sub Total	7	3		70	280	350

SESSIONAL

S.No.	Code No.	Subjects	L	T/S	60% Mid Term Ass.	40% End Term Ass.	Total Marks	
5.	1BC5	Architectural Drawing- I	2	4	150	100	250	
6.	1BC6	Arts & Graphics- I	1	3	60	40	100	
7.	1BC7	Building Construction- I	1	3	60	40	100	
8.	1BC8	Introduction to Computers-I	1	2	30	20	50	
9.	1BC9	Workshop Practice (Photography, Carpentry & Model Making)	1	2	60	40	100	
10.	1BC10	Discipline & Extra Curricular Activities	0	0	30	20	50	
		Sub Total	6	14	390	260	650	
		Grand Total	30 Periods/Week					1000

Teaching and Examination Scheme for B.Arch. (B.C.T.) (5 Year Course)

YEAR I

SEMESTER II

THEORY

S.No.	Code No.	Subjects	L	T/S	Exam. Hrs.	20% Mid Term Ass.	80% End Term Ass.	Total Marks
1.	2BC1	Ecology & Environment	2	1	3	20	80	100
2.	2BC2	Construction Materials II	2	1	3	20	80	100
3.	2BC3	Architectural Structures-II	2	1	3	20	80	100
4.	2BC4	Introduction to Architecture	1	1	2	10	40	50
		Sub Total	7	4		70	280	350

SESSIONAL

S.No.	Code No.	Subjects	L	T/S	60% Mid Term Ass.	40% End Term Ass.	Total Marks	
5.	2BC5	Architectural Drawing- II	2	4	150	100	250	
6.	2BC6	Basic Design & Field Trip	1	3	60	40	100	
7.	2BC7	Arts & Graphics- II	1	3	60	40	100	
8.	2BC8	Building Construction II	1	3	60	40	100	
9.	2BC9	Introduction to Computers- II	1	2	30	20	50	
10.	2BC10	Discipline & Extra Curricular Activities	0	0	30	20	50	
		Sub Total	6	15	390	260	650	
		Grand Total	32 Periods/Week					1000

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YEAR II

SEMESTER III

THEORY

S.No.	Code No.	Subject	L	T/S	Exam Hrs	20% Mid-Term Assessment	80% End-Term Exam	Total Marks
1	3BC1	History of Architecture-I	2	1	3	20	80	100
2	3BC2	Building Science-I (Climatology)	1	1	3	20	80	100
3	3BC3	Construction Materials-III	1	1	3	20	80	100
4	3BC4	Architectural Structures-III	1	1	2	10	40	50
Sub.Total			5	4		70	280	350

SESSIONAL

S.No.	Code No.	Subject	L	T/S	60% Mid-Term Assessment	40% End-Term Asses.	Total Marks
5	3BC5	Architectural Design-I (Including Measured Drawing camp)	0	9	150	100	250
6	3BC6	Theory of Design-I	1	1	60	40	100
7	3BC7	Arts & Graphics-III	1	2	30	20	50
8	3BC8	Building Construction-III	1	3	60	40	100
9	3BC9	Structure Lab-I	0	2	30	20	50
10	3BC10	Computer Application in Architecture-I	0	2	30	20	50
11	3BC11	Discipline & Extra Curricular Activities	0	0	30	20	50
Sub.Total			3	19	390	260	650
Grand Total				31 Periods/week			1000

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YEAR II

SEMESTER IV

THEORY

S.No.	Code No.	Subject	L	T/S	Exam Hrs	20% Mid-Term Assessment	80% End-Term Exam	Total Marks
1	4BC1	History of Architecture-II	2	1	3	20	80	100
2	4BC2	Surveying	1	1	3	20	80	100
3	4BC3	Construction Materials-IV	1	1	3	20	80	100
4	4BC4	Architecture Structure-IV	1	1	2	10	40	50
Sub. Total			5	4		70	280	350

SESSIONAL

S.No.	Code No.	Subject	L	T/S	60% Mid-Term Assessment	40% End-Term Asses.	Total Marks
5	4BC5	Architectural Design-II	0	9	150	100	250
6	4BC6	Theory of Design-II	1	1	60	40	100
7	4BC7	Arts & Graphics-IV	1	2	30	20	50
8	4BC8	Building Construction-IV	1	3	60	40	100
9	4BC9	Computer Application in Architecture-II	0	2	30	20	50
10	4BC10	Surveying Lab.	0	2	30	20	50
11	4BC11	Discipline & Extra Curricular Activities	0	0	30	20	50
Sub. Total			3	19	390	260	650
Grand Total				31 Periods/week			1000

THEORY

S.No.	Code No.	Subject	L	T/S	Exam Hrs	20% Mid-Term Assessment	80% End-Term Assess.	Total Marks
1	5BC1	History of Architecture-III	2	1	3	20	80	100
2	5BC2	Building Services-I (Water supply & sanitation)	1	1	3	20	80	100
3	5BC3	Construction Materials-V	1	1	3	20	80	100
4	5BC4	Architectural Structures-V	1	1	2	10	40	50
Sub.Total			5	4		70	280	350

SESSIONAL

S.No.	Code No.	Subject	L	T/S	60% Mid-Term Assessment	40% End-Term Exam	Total Marks
5	5BC5	Architectural Design-III (Including Educational Tour)	0	9	150	100	250
6	5BC6	Quantity Surveying & specification	1	2	60	40	100
7	5BC7	Sociology	1	1	30	20	50
8	5BC8	Building Construction-V	1	3	60	40	100
9	5BC9	Computer Application in Architecture-III	0	2	30	20	50
10	5BC10 5BC10.1 5BC10.2	Elective – I History of Interior Design History of Rajasthan Art	1	1	30	20	50
11	5BC11	Discipline & Extra Curricular Activities	0	0	30	20	50
Sub.Total			4	18	390	260	650
Grand Total			31 periods/week				1000

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Year III

Semester VI

THEORY

S.No.	Code No.	Subject	L	T/S	Exam Hrs	20% Mid-Term Assessment	80% End-Term Exam	Total Marks
1	6BC1	History of Architecture-IV	2	1	3	20	80	100
2	6BC2	Building Services-II (Electrical Services)	1	1	3	20	80	100
3	6BC3	Construction Materials-VI	1	1	3	20	80	100
4	6BC4	Architectural Structures-VI	1	1	2	10	40	50
		Sub.Total	5	4		70	280	350

SESSIONALS

S.No.	Code No.	Subject	L	T/S	60% Mid-Term Assesment	40% End-Term Asses.	Total Marks
5	6BC5	Architectural Design-IV	0	9	150	100	250
6	6BC6	Working Drawings	0	3	60	40	100
7	6BC7	Building Economics	1	1	30	20	50
8	6BC8	Building Construction-VI	1	3	60	40	100
9	6BC9 6BC9.1 6BC9.2 6BC9.3	Elective-II Real Estate & Redevelopment Product Design Design for Disabled	1	1	30	20	50
10	6BC10	Computer Application in Architecture-IV	0	2	30	20	50
11	6BC11	Discipline & Extra Curricular Activities	0	0	30	20	50
Sub.Total			3	19	390	260	650
Grand Total			31 Hrs/week				1000

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YEAR IV

SEMESTER VII

THEORY

S.No.	Code No.	Subject	L	T/S	Exam Hrs	20% Mid-Term Assesment	80% End-Term Exam	Total Marks
1	7BC1	Contract Documents & Bylaws - Interiors	02	01	03	20	80	100
2	7BC2	Building Services – III (Mech. Services)	01	01	02	10	40	50
3	7BC3	Building Science – II (Accoustic & Illumn)	01	01	02	10	40	50
4	7BC4	Arch.Structure-VII	02	01	03	20	80	100
Sub.Total			06	04		60	240	300

SESSIONALS

S.No.	Code No.	Subject	L	T/S	60% Mid-Term Assesment	40% End-Term Asses.	Total Marks
5	7BC5	Arch.Design -V	-	9	120	80	200
6	7BC6	Landscape-Interiors	1	3	60	40	100
7	7BC7	Advanced Bulg.Const.	1	3	60	40	100
8	7BC8	Interior Design Studio-I	0	3	90	60	150
9	7BC9 7BC9.1 7BC9.2 7BC9.3	Elective – III Interior Finishes Interior Lighting Systems History of Interior Design	1	1	60	40	100
10	7BC10	Descipline & Extra Curi.	-	-	30	20	50
Sub.Total			3	19	420	280	700
Grand Total			9	23	480	520	1000

YEAR IV

SEMESTER VIII

S.No.	Code No.	Subject	Duration
	8BC1	Practical Training	140 days
1		Monthly work report from architect's office	
2		Critical appraisal of built projects	
3		Field documentation of architectural details	
4		Site supervision & Finished Projects	
5		Training report	

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YEAR V

SEMESTER IX

THEORY

S.No.	Code No.	Subject	L	T/S	Exam Hrs	20% Mid-Term Assessment	80% End-Term Exam	Total Marks
1	9BC1	Professional Practice & Management	02	01	03	20	80	100
2	9BC2	Introduction to Settlement Planning	01	01	02	10	40	50
3	9BC3	Construction Technology for Housing	01	01	02	10	40	50
Sub.Total			04	03	-	40	160	200

SESSIONALS

S.No.	Code No.	Subject	L	T/S	60% Mid-Term Assessment	40% End-Term Asses.	Total Marks
4	9BC4	Arch. Design – VI	-	11	180	120	300
5	9BC5	Project Management & Construction Technology Studio	1	3	60	40	100
6	9BC6	Practical Training Presentation	-	2	180	120	300
7	9BC7	Dissertation	-	3	120	80	200
8	9BC8 9BC8.1 9BC8.2 9BC8.3	Elective IV Software for Project Management Structure Analysis of Typical Structures Software for Structural Analysis	1	2	60	40	100
9	9BC9	Discipline & Extra Curi.	-	-	30	20	50
Sub.Total			2	21	630	420	1050
Grand Total			6	24	670	580	1250

YEAR V

SEMESTER X

SESSIONALS

S.No.	Code No.	Subject	L	T/S	60% Mid-Term Assessment	40% End-Term Asses.	Total Marks
1	10BC1	Thesis Project	-	12	300	200	500
2	10BC2	Elective-V (oriented to thesis subject interior specification)	-	3	60	40	100
3	10BC3 10BC3.1 10BC3.2	Elective VI Construction Technology for Building Conservation Advanced Construction Technology	2	3	60	40	100
4	10BC4	Discipline & Extra Curi.	-	-	30	20	50
Sub.Total			2	18	450	300	750

SYLLABUS FOR B.ARCH. (B.C.T.) (5 YEAR COURSE)

YEAR I

SEMESTER I

1L	1BC1.ENGLISH COMMUNICATION
M.M.: 50	EX. HRS.: 2
OBJECTIVE:	Improvement Of Comprehension, Expression And Usage Of The Language. Stress To Be Laid On Coherence Of Expression And Structuring Of Contents In Speech And Writing Work.
CONTENTS:	<ol style="list-style-type: none">1) Direct And Reported Speech, Active And Passive,2) Tenses,3) Prepositions,4) Conditional Sentences,5) Précis Writing, Business And Professional Letter Writing. Lectures To Be Followed By Practice Session In Class.
2L + 1T	1BC2. MATHEMATICS
M.M.: 100	EX. HRS.: 3
OBJECTIVE:	<ol style="list-style-type: none">1. Statistics: Mathematical expression, moments and M.G.F., probability – simple problems; Binomial, Poisson and normal distributions – simple applications. Correlation and regression, coefficient of correlation, lines of regression – simple applications.2. Differential Equations: First order and first degree – variables separable, homogeneous form, reducible to homogeneous form, linear differential equation, reducible to Linear form, exact equations, second order ODE with constant coefficients.3. Matrices: Rank of a matrix, solution of linear simultaneous equation, inverse of matrix by elementary transformations, Eigen values, Eigen vectors, Cayley Hamilton Theorem (without proof).4. Linear Programming: Standard, Augmented, Duality, Algorithms, Unknown Integers, Dynamic programming, Simplex Algorithm, Shadow Price, LP Example, Job Shop Problem5. Coordinate Geometry of Three Dimensions: Sphere, Cylinder, Cone, Equation of Sphere, Tangent, Plane, Line, Cylinder, Equation of Cylinder, Right Circular Cylinder, Cone, Equation of Cone, Right Circular Cone.
2L+ 1T	1BC3. CONSTRUCTION MATERIALS- I
M.M.: 100	EX. HRS.: 3
OBJECTIVE:	The Understanding And Application Of Basic Building Materials.
CONTENTS:	In the context of materials like Stone, Brick and Timber, study of <ol style="list-style-type: none">1) The Nature Of Materials,2) The Manufacturing Process,3) Structural, Visual And Textural Properties,4) Identification And Selection,5) Their Application in Buildings.
EXERCISES:	Identification And Study Of Relevant I.S. Codes. Seminars And Preparation Of Reports. Visits To Manufacturing Units Are Desirable. Field Studies Should Preferably Form An Integral Part Of Tutorial Work.
2L+ 1T	1BC4. ARCHITECTURAL STRUCTURES I
M.M. 100	EX. HRS.: 3
OBJECTIVE:	<ol style="list-style-type: none">1. Concept Of Force, Graphical Presentation Of Force, Coplanar And Non Coplanar Forces, Concurrent And Non Concurrent Forces, Composition And Resolution Of Coplanar Forces By Graphical And Analytical Methods.2. Built Up Steel Sections, Centre Of Gravity And Moments Of Inertia, Parallel Axes Theorems, Product Of Inertia, Use Of Steel Tables.3. Stress And Strain, Concept Units, Tensile, Compressive And Shear Stresses, Moduli Of Elasticity And Their Relationship, Linear And Lateral Strains, Poisson's Ratio, Stress Strain Curve, Elastic Limit, Yield Point, Breaking Stress, Factor Of Safety, Safe Stress Values For Timber, Cast Iron, Mild Steel And For Steel In Tension Compression, Shear And Bending As Per Is Code.4. Types Of Loads- Dead, Live, Wind, Impact, Earthquake, Concentrated, Uniformly Distributed

And Varying Loads, Moment Of A Force,

5. Couple And Its Moment, Conditions Of Statistical Equilibrium Of Forces, Concept Of Beams And Various Support Conditions, Determination Of Support Reactions, Both Analytically And Graphically.

2L + 4S

1BC5. ARCHITECTURAL DRAWING I

M.M.: 250

OBJECTIVE:

To Develop Drawing Skills As Tools To Thinking, Visualization, And Representation Of Design.

CONTENTS:

Familiarization With Drawing Materials And Equipments. Free Hand Drawing Of Lines, Curves, Objects, Human Figures And Vegetation. Lettering And Fonts. Principles Of Plane Geometry, Scale, Orthographic Projections Of A Point, Line, Planes And Solids. Section of solids, Intersection of solids.

EXERCISES:

Studio Assignments Based On Above Topics.

1L + 3S

1BC6. ARTS AND GRAPHICS I

M.M.: 100

OBJECTIVE:

Development Of Graphic Skills, Ability And Comprehension.

Establishing Significance Of Art.

CONTENTS:

To Learn The Utility Of Pencil As A Powerful Tool Of Graphic Communication. To Appreciate The Role Of Different Colours In Presentation And Rendering Techniques.

EXERCISES:

Pencil Sketching- Human Figures, Vegetation, Automobiles, Buildings, Still Life, Etc. Pen And Ink Sketching. Use Of Water Colours, Poster Colours, Pencil Colours, Crayons, Oil Pastels, Etc. In Rendering Drawings And Sketches. Colour Wheel Study Of Primary, Secondary And Tertiary Colours.

1L + 3S

1BC7. BUILDING CONSTRUCTION I

M.M.: 100

OBJECTIVE:

The Construction Studio Work Should Demonstrate The Inter Dependence Of The Building Materials And Elements And Their Understanding To Form Complete Building Envelop.

CONTENTS:

Details Of Construction, Laying, Fixing Of Stone And Brick. Study Of Various Basic And Simple Elements Of Buildings In The Aforesaid Materials- Foundations, Walls, Openings, Roofings, And Floorings, Their Types Along With Their Principles Of Construction And Architectural Details

EXERCISES:

Preparation Of Drawings, Site Reports And Other Exercises Covering The Above.

1L + 3T

1BC8. INTRODUCTION TO COMPUTERS I

M.M.: 50

OBJECTIVE:

Develop Awareness Of Computer And Its Environment.

CONTENTS:

Computer As A Tool For Architects.

Introduction To Computer And Its Peripherals. Hardware Brief (Useful For Architects) Viz. CPU, Keyboard, Mouse, Printer, Plotter, Scanner, Digitizer, Etc. Introduction To Various Softwares Relevant To Architects Viz. Ms Word, Excel, Powerpoint, Introduction To Basic Internet Applications.

EXERCISES:

Assignments Related To Various Applications Of These Softwares.

2T

1BC9. WORKSHOP PRACTICE

M.M.: 100

(PHOTOGRAPHY, CARPENTRY, METAL & MODEL MAKING)

OBJECTIVE:

To Develop Photographic Skills, To Understand Simple Architectural Forms, Joinery And Construction Details Through Field Exercises And Model Making.

CONTENTS:

To Provide Technical Know How About Cameras, Its Accessories And Their Applications Including The Following: Camera- Definition, History, Types And Usage, Aperture, Shutter Speed, Types Of Lenses And Accessories. Film Rolls, Types And Usages. Flash, Types And Usage. Film Processing Description And Method (Colour And B/W). Composition-Settings With Respect To View Finder, Weather, Place, Colour, Mood And Purpose. Architectural-Exteriors And Interiors With Respect To Scale, Composition, Texture, Colour, Skyline, Light And Shade, Exploration And Usage Of Various Materials Used In Building Construction And Model Making. Types of joints in wood and metals.

EXERCISES:

Shooting Pictures Of Landscape, Portraits, Interiors And Buildings. Developing And Printing Of Pictures In Laboratory, Making Scaled Models With Different Materials, Workshop/ Assignments Based On Construction Joints In wood and metals.

SYLLABUS FOR B.ARCH. (B.C.T.) (5 YEAR COURSE)

YEAR I

SEMESTER II

2L + 1T M.M.: 100 OBJECTIVE: CONTENTS: EXERCISES:	2BC1. ECOLOGY & ENVIRONMENT EX. HRS.: 3 The Understanding And Application Of Basic Ecology And Ecological Systems Into The Built Environment. 1) Fundamentals of Ecosystem, Our Earth's Environment, 2) Resource and Environment, Management of Environment, 3) Environmental Legislation, Environmental Quality and Indicators, 4) Environmental Planning and Design Guidelines, 5) Human Impact on Environment, Environmental pollution. Study Of Relevant Ecosystems, Botanical & Zoological Specimens At Both Micro & Macro Levels, Effects Of Pollution And Prevention And Control Of Both Natural & Manmade Hazards.
2L + 1T M.M.: 100 OBJECTIVE: CONTENTS: EXERCISES:	2BC 2. CONSTRUCTION MATERIALS II EX. HRS.: 3 The Understanding And Application Of Basic Building Materials. In the context of materials like Mud, Lime and Cement, study of 1) The Nature Of Materials, 2) The Manufacturing Process, 3) Structural, Visual And Textural Properties, 4) Identification And Selection, 5) Their Application in Buildings. Identification And Study Of Relevant I.S. Codes. Seminars And Preparation Of Reports. Visits To Manufacturing Units Are Desirable. Field Studies Should Preferably Form An Integral Part Of Tutorial Work.
2L + 1L M.M. 100	2BC3. ARCHITECTURAL STRUCTURES II EX. HRS.: 3 1. Shear Force And Bending Moment Diagrams In Case Of Simply Supported Beams, Cantilevers And Beams With Overhangs Due To Concentrated Loads And Distributed Loads. 2. Theory Of Simple Bending, $M/I=F/Y=E/R$ Equation And Its Derivation, Section Modulus, Distribution Of Normal Stress Due To Bending. 3. Composite Beams, Shear Stress Distribution In Rectangular, Circular, T And I Sections. 4. Prejointed Plane Frames, Determination Of Forces In The Members By Method Of Joints, Method Of Sections And Graphical Method. 5. Lifting Machines: Mechanical Advantage, Velocity Ratio And Efficiency, Law Of Machine, Pulleys And Pulley Blocks.
1L + 1S M.M.: 50 OBJECTIVE: CONTENTS: EXERCISES:	2BC4. INTRODUCTION TO ARCHITECTURE EX. HRS.: 2 To Orient The Student To Study Of Architecture As A Profession And Design Discipline. 1) Role Of An Architect In An Architectural Project And In Society Through History; 2) Disciplines And Skills To Be Learnt By An Architect; 3) Factors Influencing Architecture Of A Place, Climate, Materials, Socio Cultural, Technological, Etc.; 4) Introduction To Old And New Architectural Works; 5) Understanding The Terms Such As Vernacular, Traditional, Classical, Modern, Post Modern And Neo Modern Renaissance, European, Oriental. Presentation Of Observation At The Respective Native Places Of Students. During Educational Trips/ Site Visits. Visits To Buildings Of Architectural Significance.

2L + 4S	2BC5. ARCHITECTURAL DRAWING II
M.M.: 250	
OBJECTIVE:	To Develop Drawing Skills As Tools To Thinking, Visualization, And Representation Of Design.
CONTENTS:	Development of surfaces of solids, Isometric, axonometric of solids. Sciography Of Simple Geometric Forms Leading To Sciography Of Architectural Forms. Perspective-One Point, Two Point And Three Points. Exercises From Simple Geometrical Forms Leading To Perspective Of Building Forms. Plotting Of Sciography On Perspective Drawings. Graphical Presentation And Rendering In Pen And Ink Of Architectural Drawings And Materials.
EXERCISES:	Studio Assignments Based On Above Topics.
1L+3S	2BC6. BASIC DESIGN AND FIELD TRIP
M.M.: 100	
OBJECTIVE:	To Familiarize Students With Theoretical Basis And Design Process Through Observation' Comparison, Analysis With The Help Of Prototypes, Model And Drawings.
CONTENTS:	Design In Everyday Life, Basic Art Form, Elements Of Design, Space, Form Line, Texture, Colour, Etc. Principles Of Design, Scale, Balance, Proportion, Rhythm, Harmony, Etc. Objectives Of Design, Beauty, Order, Efficiency And Economy. Forms And Shapes In Everyday Life. Scale In Architecture. Study Of Anthropometrics. Introduction To Design Methodologies.
EXERCISES:	Exercise In 2 And 3 Dimensional Composition To Achieve Harmony, Balance, Contrast, Rhythm, Etc. Geometrical Analysis Of Forms And Patterns In Architecture, Objects Of Everyday Use And Other Forms. Study Of Anthropometrics And Its Application In Design Exercises. Simple Imaginative Problems For Example Pedestal, Basic Shelter, Street Furniture, Memorials, Etc.
1L + 3S	2BC7. ARTS AND GRAPHICS II
M.M.: 100	
OBJECTIVE:	Development Of Graphic Skills, Ability And Comprehension. Establishing Significance Of Art.
CONTENTS:	3 D Compositions In Different Mediums. Introduction To History Of Art, Artistic Tradition And Theories.
EXERCISES:	2 D Compositions In Various Colour Mediums, Textures. 3 D Compositions In Plaster Of Paris, Clay, Paper, Cardboard, Etc.
1L + 3S	2BC8. BUILDING CONSTRUCTION II
M.M.: 100	
OBJECTIVE:	The Construction Studio Work Should Demonstrate The Inter Dependence Of The Building Materials And Elements And Their Understanding To Form Complete Building Envelop.
CONTENTS:	Details Of Joinery In Timber And study of various basic elements like foundation, walls, roofs/floors and openings along with their principles of construction and Architectural details. Introduction To Construction, Machinery And Equipments. Site Visits Should Form An Integral Part Of The Studio Work.
EXERCISES:	Preparation Of Drawings, Site Reports And Other Exercises Covering The Above.
1L + 2S	2BC9. INTRODUCTION TO COMPUTER II
M.M.: 50	
OBJECTIVE:	Develop Awareness Of Computer And Its Environment.
CONTENTS:	Computer As A Tool For Architects. Introduction To Various Softwares Relevant To Architects Viz. AutoCAD, 3DS Max, Coreldraw, Adobe Photoshop, Pagemaker, Etc. Advanced Internet Applications.
EXERCISES:	Assignments Related To Various Applications Of These Softwares.

SYLLABUS FOR B.ARCH. (B.C.T.) (5 YEAR COURSE)

YEAR II

SEMESTER III

2L + 1T **3BC1. History of Architecture – I (INDIAN)** **Ex. Hrs. 3**
M.M. 100

Objective: To develop understanding of social cultural, material and structural attributes, that shaped and architecture in different periods, also to study how interaction and communication with different cultures influenced and reshaped architecture of India.

Contents: Architecture of :
1) Indus valley,
2) Buddhist era,
3) Hindu empires,
4) Islamic rule,
5) Moghul era
 in terms of design parameters such as cross cultural theories relating to art and architecture construction methods etc.

Exercises: Analytical and illustrative exercises related to above topics such as papers seminars etc.

1L + 1T **3BC2. Building Science– I (Climatology)** **Ex. Hrs. 3**
M.M. 100

Objective: Understanding of inter relation of built environment with material environment also issues of climatic balance in traditional and contemporary built environments.

Contents: **1) Elements of climate** : Solar radiation, terrestrial radiation, temperature, humidity, wind, cloud, precipitation etc. Factors affecting climate of macro and micro-level.
 Measurement and quantification.
2) Effect of climate on man : body heat balances, thermal indices, thermal comfort, solar chart, psychometric chart and its application.
3) Analysis of climate data, climatological site analysis and its application in site planning and design evolution.
4) Effect of climate on building envelope : heat flow, heat transfer, heat storage and time lag of various building materials and elements.
 Day lighting, air movement and ventilation
5) Passive means of thermal control
 Solar movement and sun shading devices.

Exercises: Analytical and illustrative exercises, related to above topics.

1L + 1T **3BC3. Construction Material - III** **Ex. Hrs. 3**
M.M. 100

Objective: To introduce and familiar student with/to composite and multiple application of materials.

Contents: **Study** of physical, chemical, visual and textural properties of materials their application and use in building and building components as applied in buildings:
1) Cement products: Mortars, concrete and R.C.C. preparation, application techniques, tests concreting under special conditions, special varieties of concretes,
2) Plastics,
3) Polymers,
4) Glass and
5) Wood and its derivatives, plys and boards.

Exercise: The course may be conducted as core lectures, case studies, site visits and market surveys. Interaction with field personal and demonstration sessions.
 Assignments will include.
 Site visit report, seminars and reports of survey and case studies. Emphasis should be on application techniques.

1L + 1T	3BC4. Architectural Structures– III M.M. 50	Ex. Hrs. 2
<ol style="list-style-type: none"> 1. Relations between load, shear force, bending moment, slope and deflection; slopes and deflections in determinate beams using double integration method, moment area method and the conjugate beam method. 2. The long and short columns or struts; slenderness ratio; buckling load; various end- conditions; equivalent length of a strut; strut with eccentric load; with initial curvature, limitations of Euler's theory; Rankine- Gordon formula. 3. Soil and soil mass constituents; water content, specific gravity, voids ratio, porosity, degree of saturation, air voids and air content; unit weights, density index etc., Inter-relationships of the above. 4. Determination of water content, specific gravity; particle size distribution sieve and sedimentation analysis; consistency limits; voids ratio and density index; classification of soil for general engineering purposes; particle size textural, H.R.B. and Unified and I.S. Classification systems. 5. Bearing capacity of soils; shallow foundation; Terzaghi's and Meyerhoff's formula for bearing capacity; plate loading test, standard penetration test. 		

9 Studios	3BC5. Architectural Design– I (Including Measured Drawing Camp) M.M. 250	
<p>Objective analysis of activities and spaces in a given predominant function. Its representation in graphic form. Design exercise evolving out of single functions such as ticket counters/reception offices, security offices, Kiosks, booths, Information cells etc. Multiple function such as primary health centers, convenient shopping etc.</p> <p>At least one design problem to concentrate on comprehensive graphic representation to form a prelude to measure drawing.</p> <p>Measure drawing camp to include study of a building/group of buildings/settlements of architectural importance, involving detailed drawings, constructional details, material used giving due importance to the given context.</p>		

1L + 1T	3BC6. Theory of Design– I M.M. 100	
<p>Objective: To Introduce the elements; principles and objectives in orientation to Architectural Design.</p> <p>Contents: Formulation of design concepts through elements and principles of Architectural design.</p> <p style="padding-left: 20px;">Study of space usage and its implications.</p> <p style="padding-left: 20px;">Architectural scale as manifestation of functional requirements.</p> <p style="padding-left: 20px;">Appreciating Architecture through important building examples.</p> <p style="padding-left: 20px;">Space as architectural raw material.</p> <p style="padding-left: 20px;">Classification of spaces</p> <p style="padding-left: 20px;">Inter dependence of Form, Structure, Function and space.</p> <p style="padding-left: 20px;">Relationship of Plan, Section and Elevation.</p> <p style="padding-left: 20px;">Structure and Form</p> <p style="padding-left: 20px;">Architectural Programming</p>		

1L + 2S	3BC7. Arts & Graphics– III M.M. 50	
<p>Emphasis is to be laid on graphic skills/presentation techniques/model making etc.</p> <p>Indoors and outdoors sketching in pencil/crayons/color/charcoal/ink of objects/buildings/ automobiles/vegetation/human figures etc.</p> <p>Sculpture/mural exercises in clay/POP/ceramics/metal/junk & scrap materials etc.</p> <p>Study of 3D forms and spaces with basic principles of design like repetition, symmetry, rotation and rhythm.</p> <p>Study of various color scales.</p>		

1L + 3S	3BC8. Building Construction - III M.M. 100	
<p>Emphasis should be laid on understanding of constructions in R.C.C. in different parts of building through basic building elements.</p> <p>Foundation : R.C.C. footings, isolated, with their connections with superstructure along with Damp proof course.</p> <p>Structure : Simple R.C.C. frame with beams and columns.</p> <p>Roof : Flat R.C.C. roof with water proofing details study of different R.C.C. roof forms and its connection with structure.</p> <p>Flooring : R.C.C. flooring, mosaic flooring & cement tile flooring, interlocking paving blocks in ground and upper floors.</p> <p>Staircases : Staircases in R.C.C. with different types.</p>		

3BC10. Computer Application in Architecture - I

2 T

M.M. 50

- Objective:** To apprise the students of the existing Presentation related softwares like word processors, drawing tools and photo editors etc.
- Contents:** Application of Word processors. Available contents and tools in the latest versions of popular softwares like MS Word, Lotus, Pagemaker etc. Special emphasis on drawing tools in the softwares. Introduction to various presentation linked softwares like MS Power point, Corel Draw and Photoshop and their usage. Usage and understanding of Peripheral Hardware like Printers and Scanner.
- Exercises:** Drafting letters, reports on MS Word, Drawing basic geometrical objects and coloring them. Making simple presentation and animations in MS Power Point. Scanning images and modifying them in Photoshop and transferring in different allied softwares.

SYLLABUS FOR B.ARCH. (B.C.T.) (5 YEAR COURSE)

YEAR II

SEMESTER IV

4BC1. History of Architecture – II
M.M. 100 **Ex. Hrs. 3**

2L + 1T

Objective: To develop understanding of architecture as society's primary response to simple needs and problems related to shelter an complete problems related to natural and man made environment both in qualitative and quantities terms, also to understand evolution of Architectural styles' as response to prevalent socio-cultural, technological and intellectual complexities of societies.

Contents: Study of evolution of design concepts, philosophy construction techniques, materials and structural solutions with the help of selected examples, with reference to social, cultural, geographical political and intellectual climate of the place and period, as styles of Architecture like:
 1) Egyptian,
 2) West Asiatic,
 3) Greek, Roman,
 4) Early Christian, Romanesque,
 5) Byzantine and Gothic.

Assignments: Analytical and illustrative exercises, as tests, seminars or papers.

4BC2. Surveying
M.M. 100 **Ex. Hrs. 3**

1L + 1T

1) Introduction : Principles and classification of survey, Basic measurements in surveying, Basic methods of surveying, Different types of transverse.
2) Chain survey : Introduction, Instruments, Types of chains and tapes, their uses and construction details.
Compass survey : Introduction, Different type of compass, Meridians, Bearings, Dip, Declination, Local attraction, Adjustment of angles, Loose needle and fast needle method, Compass transverse.
Theodolite survey : Introduction, Basic definitions, Construction details, Temporary adjustment, Measurement of vertical and horizontal angle, Area computations by planimeter.
Plane Table surveying : Elements of plane table survey, Plane table transverse.
3) Leveling : Basic definitions, Types of leveling, sources of errors, Computations & Permanent adjustment of levels,
4) Contouring: Contouring and Earth work calculation.
5) Setting out work for buildings : Introduction, Controls for setting out, horizontal control, vertical control, setting out in vertical direction, Positioning of structure, Setting out of foundation trenches.

4BC3. Construction Material - IV
M.M. 100 **Ex. Hrs. 3**

1L + 1T

Objective: To introduce and familiar student with application of metal and alloys.

Contents: of physical, chemical, visual and textural properties of metals and alloys;
 1) **Application** of metals and alloys in buildings, structural and non-structural applications;
 2) **Metals** like iron, aluminium, copper and
 3) **Alloys** like steel, brass, and are to be studied;
 4) **Protective finishes** on metals;
 5) **Study** of metal applications in hardwares.

4BC4. Architectural Structures - IV
M.M. 50 **Ex. Hrs. 2**

1L + 1T

1. Materials for cement concrete; cement-properties of the various types of cements. ISS tests, storage; Aggregate properties of fine and coarse aggregates, natural and artificial aggregates. ISS tests, grading of aggregates, fineness modulus impurities; brief introduction to admixtures.
2. Concrete Mixing – ordinary and controlled mixes design of mix-trial and error minimum void ratio, fineness modulus method; tests for workability of fresh concrete; effect of water/cement ratio on strength; properties of hardened concrete; strength tests on hardened concrete.
3. Necessity of reinforcement; characteristics of reinforcing material; elastic theory for reinforced concrete design; assumptions made.
4. Requirements of good structures, safety, stability, economy, Design concept of factor of safety and limit state; failure modes of a structure, permissible stresses and permissible deflections, loads system, critical combination of loads, earthquake forces, wind loads on tall building.
5. Mild steel and high tensile steel; working stresses, factors of safety; live loads on various types of floor and roofs; introduction and use of Design codes. IS 875, IS456 and IS 800.

4BC5. Architectural Design - II
M.M. 250

9 Studios

Introduction to basic design methodologies including emphasis on case studies, time activities studies, anthropometrics and their presentation as a prelude to design solution. Due emphasis is to be given on concurrent subjects like Climatology, construction techniques etc. Incorporation of building materials in design solution to be emphasized.

Design exercise may include buildings with multiple use such as clubs, clinics, motels, secondary schools, community center.

4BC6. Theory of Design - II

1L + 1T

M.M. 100

Objective: To appreciate the guiding principles in the words and philosophies of Master Architects.

Contents:

- Study of time, life, works and philosophies of Louis Sullivan, Frank Lloyd Wright, Walter Gropius, and Mies Vander – Rohe, L e Corbusier.
- Introductory note on the Chicago school and ultimately more stress should be given on development of concepts of their individual work as entity in itself.
- Louis Sullivan : Guaranty Building, Wainwright building, Auditorium building etc.
- Walter Groplus : Bauhaus, Fagus Shoe Last Factory etc.
- Meis Vander Rohe : Farnsworth Houses, Lake Share Apartment, Seagram Building etc.
- Frank Lloyd Wright : Prarie Houses organic Architecture etc.
- Le Corbusier : Early and later works as well as specific study of Chandigarh.

4BC7. Arts & Graphics - IV

1L + 2 S

M.M. 50

Emphasis is to be laid on various presentation techniques and renderings of drawings.

Perspectives of building and Interior views.

Rendering in different mediums like pencil, ink, water colors etc.

Study of light and shade with reference to objects, buildings etc.

Making collages, murals, sculptures at a bigger scale leading to a art project, using different materials like metals, clay, plaster of paris, wood, paper ceramics, glass etc.

History of art, artists & their works, various movements and schools of thought like cubism, fauvism, impressionism etc.

4BC8. Building Construction - IV

1L + 3 S

M.M. 100

Emphasis is to be laid on understanding of construction in steel in different parts of buildings.

Foundation : Grillage foundation, Structure : Steel columns and beams structure, Structural floor & steel trusses structures, with riveted and welded joints. Roof Covering in G.I., Asbestos and Fiber sheets etc. Flooring : Industrial flooring. Staircase : Metal staircase.

4BC9. Computer Application in Architecture - II

2 T

M.M. 50

Objective: Introduction of drafting software and management of Data in related software.

Contents: 2D drafting in any popular architectural software e.g. ACAD (latest version). Management of Data Processing Software e.g. MS Excel, Tools related to Bar Charts, Pie Charts and Tables to be introduced. Simple calculation functions like addition, average and sorting to be learnt.

Exercises: Drafting simple geometrical object in 2 dimension. Creation of double lime Plans of simple building types. Creation of Data tables, Pie charts and Bar charts, Simple mathematical exercises using the same data.

CURRICULUM FOR B.ARCH. (B.C.T.) (5 YEAR COURSE)

YEAR III

SEMESTER V

	5BC1. History of Architecture – III	
2L + 1T	M.M. 100	Ex. Hrs. 3
Objective:	To study the styles, form and method of construction of the Renaissance to Modern period in Architecture.	
Contents:	<ol style="list-style-type: none"> 1) Renaissance and Baroque Architecture – The works of Brunelleschi, Bernini, Michel Angelo, Raphael, Andrea Palladio and Christopher Wren. 2) British–Colonial Architecture in India, Indo–Gothic, Indo–Saracenic and Indo–Renaissance Architecture. Planning and Design of New Delhi by Sir Edwin Lutyens. 3) Modern Architecture and its development during Industrial revolution and its influence thereby. The great international exhibitions. 4) Development of various Movements, Thoughts and Philosophies during 19th Century such as Neo-classicism, Arts & Crafts movement, Art Nouveau and The Viennese Secession. 5) Development of various Movements, Thoughts and Philosophies during 20th Century such as Deutscher Werkbund, Futurism, Constructivism, Expressionism, Art Deco, Cubism and De Stijl. 	
Exercises:	Analytical and illustrative exercises of above topics in the form of papers and seminars.	
	5BC2. Building Services – I (Water Supply & Sanitation)	
1L + 1T	M.M. 100	Ex. Hrs. 3
Objective:	To study water supply and sanitation in building design.	
Contents:	<ol style="list-style-type: none"> 1) Supply of water to different types of buildings; Sources of water, modes and methods of conveyance of water, fixtures and appliances. 2) Distribution of water, methods of distribution, different distribution systems, and their principles of layout, Design of water distribution system in a campus, and in a building, overhead and underground water storage tanks. 3) Refuse; different forms of refuse, garbage, sludge, toilet waste and storm water collection and disposal system, Requirements for various building types. 4) Sanitation; manholes, grease chambers, etc. Traps, ventilation of drains and sewers, Principles of design of drainage lines, drainage layouts for building premises, Longitudinal sections of drains. Drainage in non municipal area – soak wells, septic tanks. 5) Sanitation, Fittings & Fixtures; water closets, flushing valves, flushing tanks, basins and its accessories, rain water, drainage pipes, spouts, sizing of rain water pipes, disposal system of rain water at ground level, storm water drainage. 	
Exercises:	Study of IS Codes. Preparation of reports, visit to construction site and documentation. Market survey to study water supply and drainage products.	
	5BC3. Construction Material – V	
1L + 1T	M.M. 100	Ex. Hrs. 3
Objective:	Understanding properties and use of decorative and protective finishes.	
Contents:	<ol style="list-style-type: none"> 1) Decorative finishes; wooden flooring, wooden staircase, wooden paneling, glazed floor wall finishes, ceramic tile finish; 2) Damp proof materials, 3) Thermal insulation, 4) Sound insulation, 5) Fire proof finish. 	
Exercise:	Study of I.S. Codes, Seminars and preparation of reports. Visit to construction site.	
	5BC4. Architectural Structures – V	
1L + 1T	M.M. 50	Ex. Hrs. 2
Objective:	Design of R.C.C. construction. (The teaching program should lay relatively greater emphasis on the conceptual understanding rather than design calculations.	
Contents:	<ol style="list-style-type: none"> 1) Design of spread footing, combined footing, simple raft foundation. 2) R.C.C. design – T beams, L beams, Columns and Isolated column footing, 3) RCC wall, retaining wall. 4) Design of one way and two way slabs. 5) Design of RCC cantilevers. 	
	5BC5. Architectural Design – III (Including Educational Tour)	
9 S		M.M. 250
Objective:	To understand multiuse institutional and public building at community level.	
Contents:	Design of an Institution or public building at the community scale of infill scale, Understanding essential character of an Institution or Public building. Influence of culture, land, climate, technology and finance on the building design, Part details of the project to understand design resolution.	

Projects: Community Hall, Neighborhood school, Bank building, Religious Institution, Shopping Plaza.

5BC6. Quantity Surveying & Specification

1L + 2 T

M.M. 100

Objective: Basic understanding of preparing estimates and tender document for design of building.

Contents: Introduction to procedure of estimating, date require for framing an estimate, type of estimates. Approximate and detailed estimate, Abstract of Estimates, bills of quantities, Contingencies. Taking off quantities for principal building works, electrical works. Analysis of Rate for Principal civil works, item rate considering current market rate for building materials and labor wages as well as P.W.D. scheduled of rates. Composition of rate – percentage – distribution for materials, labor, tools plant and Contractor's Profit.

Preparation of tender document, notice inviting tender and advising the client regarding selection of contractor. Mode of measurement. Signification of specification in building construction. General and detailed specification for all kind of principal building works and building materials.

Exercises: Preparing estimate and tender document for a building. Studying tender document of Government projects and private projects.

5BC7. Sociology

1L + 1 T

M.M. 50

Objective: To develop a sociological base for Architecture.

Contents: Man, environment and society. Rural society, traditional patterns and trends of change. The concept of social stratification, urbanization and modernization. Concept of social structure, cultural and social institutions, relation between social structure and special structure, Social aspects of housing and problems of slums. Social theories of Gandhi and Nehru and Contemporary India. Community development and panchayati Raj.

Exercises: Seminars and preparing paper.

5BC8. Building Construction - V

1L + 3 S

M.M. 100

Objective: To study construction of different protective finishes in building design.

Contents: Wall finishes, Floor finishes, Terrace water proofing, Basement damp proof construction, Cavity wall construction, Wood Paneling, Stone paneling, Flase Ceiling, partitions and sliding folding doors in wood.

Exercises: Preparing Construction drawings bases on above topics. Preparing report of a building selected from site and presentation.

5BC9. Computer Application in Architecture - III

2 T

M.M. 50

Objective: Developing Computer application skills for building drawings and presentations.

Contents: Drawing plan, section, elevation of a building in AutoCAD. Drawing Construction drawing and details. Architectural rendering and coloring in AutoCAD. Plotting of drawing.

Exercises: Preparing drawings based on above topics for selected buildings.

5BC10. Elective - I

1L + 1 T/S

M.M. 50

Objective: To Development sensitivity to other related dimension of Architecture.

Contents:
1. History of Interior Design
2. History of Rajasthan Art.

CURRICULUM FOR B.ARCH. (B.C.T.) (5 YEAR COURSE)

YEAR III

SEMESTER VI

6BC1. History of Architecture – IV		
2L + 1T	M.M. 100	Ex. Hrs. 3
Objective:	Understanding the works and philosophy of Contemporary Architects.	
Contents:	<ol style="list-style-type: none"> 1) Modern Architecture after the great masters : Alvar Aalto, Eero Saarinen, Jorn Utzon and Louis I Kahn. 2) Post – Modern Architecture : Robert Venturi, Philip Johnson, Charles Moore and Michael Graves. 3) High Tech Architecture : James Sterling, Renzo Piano, Richard Rogers and Norman Foster. 4) Deconstruction Architecture : Peter Eisenman, Frank Gehry, Bernard Stumi and Zaha Hadid. 5) Post Independence Architecture in India : Le-Corbusier, Louis I Kahn, Kanvinde, B.V. Doshi, Stien, Charles Correa, Uttam Jain, Raj Rewal and A.D. Raje. 	
Exercises:	Analytical and Illustrative exercises of above topics in the form of papers and seminars.	
6BC2. Building Services – II		
(Electrical Services)		
1L + 1T	M.M. 100	Ex. Hrs. 3
Objective:	To Study electrical services in building design.	
Contents:	<ol style="list-style-type: none"> 1) Electrical distribution systems in buildings, 2) Mains and sub distribution, switches and controls, 3) Layout system for lighting, fans, telephones. 4) Service systems: Lifts, pumps, air-conditioning system, computer systems, etc. 5) Earthing and lightening protection in building. 	
Exercises:	Preparation of reports, visit to construction site and documentation. Market survey to study electrical products.	
6BC3. Construction Materials - VI		
1L + 1T	M.M. 100	Ex. Hrs. 3
Objective:	Prefabrication Technology and cost effective building material.	
Contents:	<ol style="list-style-type: none"> 1) Ferrocement, 2) Precast construction, 3) Pre-stressed construction, 4) Structural steel roofing and steel construction, 5) Cost effective building material. 	
Exercise :	Study of IS codes, seminars and preparation of reports and visit to construction site.	
6BC4. Architectural Structures – VI		
1L + 1T	M.M. 50	Ex. Hrs. 2
Objective:	Design of Steel Structure.	
Contents:	<ol style="list-style-type: none"> 1. Introduction to Design of steel structures. 2. Foundation – Grillage foundation. 3. Steel Design – Columns and beams under ordinary loading condition, 4. Steel strusses. 5. Plate and gantry girders. 	
6BC5. Architectural Design – IV		
9S		M.M. 250
Objective:	Understanding correlation between function, structure, material, construction and services.	
Contents:	Design of a building to understand the relation between function and structure. The idea of form follows function and vice versa. The structural system as a design element. This design concept is to be constructed with the understanding of materials and construction techniques and various services needed for the functions of the building.	
Project:	Design of public buildings such as multistory apartment, commercial building, multiplex, etc.	
6BC6. Working Drawings		
3 T/S		M.M. 100
Objective:	Architectural detailing and execution drawings.	
Contents:	Preparing Construction drawings – plan, section, elevations, details, electrical, plumbing, finishes, flooring etc. Drawings for the municipal approval. Preliminary estimates.	
Project:	Multistory apartment building or commercial building in urban context.	

6BC7. Building Economics**1L + 1T****M.M. 50****Objective:** To develop a Economic base for Architecture.**Contents:** General economic concepts, demand and supply consumption, production distribution and its relevance to economics, Money, banking and bank credits, cost and cost indices. Inflation and inflationary pressures, Mixed economy, Economics of private and public housing development, financing of projects, economic feasibility report etc. with special reference to India. Relationship of world economy, national economy, regional economy to a project**Exercises:** Seminars and preparing paper.**6BC8. Building Construction - VI****1L + 3 S****M.M. 100****Objective:** To study application of steel and aluminum sections and precast technology in buildings.**Contents:** Sky light, north light, curtain wall, structural glazing, metal cladding, section windows, aluminum windows and pre-cast construction.**Exercises:** Preparing construction drawings based on above topics. Preparing report of a building selected from site and presentation.**6BC9. Elective - II****1L + 1 T****M.M. 50****Objective:** To develop understanding of other related dimensions of Architecture.**Contents:**

1. Real Estate & Redevelopment
2. Product Design
3. Design for Disabled.

6BC10. Computer Application in Arch - IV**2 T/S****M.M. 50****Objective:** Three dimensional explorations and presentations**Contents:** Making drawings in 3-D studio and rendering, digitizing maps, Creative explorations on computers.**Exercises:** Preparing drawings based on above topics for selected building

	7BC1. Contract Documents & Byelaws	
2L + 1T	M.M. 100	Ex. Hrs. 3
Objective:	Architectural practice and building regulations.	
Contents:	<ol style="list-style-type: none"> 1) Nature of building contracts; types; Condition of contract; obligations and responsibilities of clients, contractors and architects. 2) Tenders – calling, scrutiny and recommendations, open and selective tender systems; two stage tender scrutiny process, Pre-tender qualifications and registrations of contractors. 3) Deposits, labor laws and obligations : disputes and settlement of disputes. 4) Building bylaws : ground coverage, FSI calculations, building height regulations, building use regulation, NA – NOC, BU certificate. 5) Buildings services approvals and completion certificate procedure. 	
	7BC2. Building Services-III (Mechanical Services)	
1L + 1T	M.M. 50	Ex. Hrs. 2
Objective:	Understanding mechanical services for building design.	
Contents:	<ol style="list-style-type: none"> 1) Basic principles of refrigeration, refrigeration cycle and system components. 2) Air cooling and air conditioning, planning and design considerations, psychometric chart and it's use. 3) Lifts, grouping of lifts, return time, design of lift banks for carrying capacity and travel time, installation requirements, escalators. 4) Fire extinguishing systems, warning systems, fire resistant doors, planning of buildings for fire escapes, 5) Solar water heating systems. 	
Exercises:	Preparation of reports, visit to construction site and documentation. Market survey to study mechanical products.	
	7BC3. Building Science-II (Acoustics & Illumination)	
1L + 1T	M.M. 50	Ex. Hrs. 2
Objective:	Understanding Acoustics and Illumination in building designs.	
Contents:	<ol style="list-style-type: none"> 1) Basic Terminology and definitions. Physics of sound. Behaviour of sound in an enclosed space. Criteria for acoustic environment-location of building, geometry and shape, echo, reverberation time, sound absorption coefficient, noise rating curves. 2) Predictions of acoustical conditions and approach to designing enclosure for predetermined acoustical responses, corrective of existing deficient enclosures. Introduction to sound reinforcing system-amplification and distribution. Selection of acoustic materials, construction details and fixing. 3) Noise – physiological and psychological effects, transmission loss, flanking of sound, structure borne sound and noise from different mechanical equipments. Noise control techniques and their applications. 4) Introduction to illumination. Laws of illumination. 5) Design for lighting, classification of lighting system – direct, diffused, indirect etc. Artificial light sources, types and their use limitations. Use of artificial lighting as an element in architectural scheme particularly exhibitions, theatres, offices and stores etc., lighting for road traffic, decorative and flood lighting. 	
Exercises:	Medium size acoustical design supplemented with drawing and calculations. Qualitative and quantitative aspects of lighting supported by actual exercises.	
	7BC4. Architectural Structure - VII	
2L + 1T	M.M. 100	Ex. Hrs. 3
Objective:	Conceptual study of Advance Frame construction structures with reference to high rise buildings and surface structure.	
Contents:	<ol style="list-style-type: none"> 1) Definition of determinate and indeterminate structures, redundant frames, static and kinematic indeterminacy of beam. Cylindrical, parabolic and flat arches, advantages and limitations. 2) Beams and columns and various types of supporting systems cantilever and propped cantilever. Continuous and fixed beams and their behavior under load. Slope deflection and Knal's method for analysis of continuous beams and simple portal frames. 3) Simple framed structures and trusses-advantages and limitations. Conceptualizing and understanding of surface structures – shells, domes and folded plates. 4) Pile and raft foundations 5) Pre-stressing – Method and losses in pre-stressing, comparison of RCC and pre-stressing. Pre-stressed concrete beams. 	
	7BC5. Architectural Design-V	
9 T/S		M.M. 200
Objective:	Understanding building in urban context.	
Contents:	To understand the issue of building and context, building bylaws, urban design. The design of building will look into aspects of commercial feasibility and building program. Architectural dimension with issues of services.	
Project:	Designing a urban insert – commercial building, institutional building with a auditorium, public building.	

7BC6. Landscape & Site Planning

1L + 3T/S

M.M. 100

Objective: Understanding theory and design of landscape and site plan.

Contents: Introduction to landscape architecture. Elements of landscape design and their relation to built environment. Plant characteristics – The structure, color, form and foliage of various trees and shrubs and climbers and ground covers. Study and identification of Indian plants and trees etc. Plant propagation. Study of landscape in historical perspective – Indian, Persian, Mughal, Japanese, Chinese etc. Landscape designing – site analysis and development. Designing and presentation of landscape schemes for building projects, gardens/parks, historical monuments and places of tourist interest etc. Contemporary attitudes to landscape design. Design of road layouts, parking and campus planning.

Exercise: Design of landscape for building projects and public spaces.

7BC7. Advance Building Construction

1L + 3T/S

M.M. 100

Objective: Study of advance construction systems in architecture.

Contents: Advanced Foundations – Pile and raft foundations. Advanced methods of multistory building construction – Lift slab construction, slipform construction etc. Space frames, unconventional buildings like TV towers etc. Geodesic domes – principles and construction. Disaster resistant construction system.

Exercises: Preparing Construction drawings based on above topics. Preparing report of a building selected from site and presentation.

7BC8. Building Construction & Management Studio

3T/S

M.M. 150

Contents: Designing a Day & Time schedule of execution of a project within specific period. The staged process including cost & availability at stages, small buildings residence to be taken.

Case studies of similar buildings erected with different techniques and materials of construction comparison in life, cost & degree of ease or vulnerability.

Design a scheme with a chosen technique of construction with all construction details.

Citing and documenting design and details of any building built on latest evolved technical construction.

7BC9. Elective III

7BC9.1. Project Management

7BC/9.2. Steel Structures

7BC/9.3. High rise Buildings – Structure Systems & Analysis

L1 + 1T/S

M.M. 100

Objective : To study other related dimensions of Building Construction Technology.

SEMESTER-VIII**YEAR 4****8BC1. Practical Training**

140 days

Objective: To expose student to Architectural practice and construction and execution.

Contents: Student shall work for a period of 140 days in an office of Architect approved by the department. He shall be submitting monthly work report, critical appraisal of built projects, field documentation of architectural details and site supervision & Finished projects.

9BC1. Professional Practice & Management		
2L + 1T/S	M.M. 100	Ex. Hrs. 3
Objective:	Understanding architectural practice.	
Contents:	<ol style="list-style-type: none"> 1) The architect and his office, relationship with clients, consultants, contractors, legal responsibilities of architects, code of professional practice, fees 2) Architectural Competitions And Architects Registration Act 1972. 3) Tender and tendering procedures, principle of contract and agreements. Control of constructional operations. Arbitration and its proceedings and awards. 4) Introduction to principles of business management, project programming and monitoring PERT and CPM network and their analysis. 5) Human relation and personnel management. Brief idea about accounting and book keeping, business correspondence, information storage and retrieval systems. 	
Exercises:	Preparing a report of a study of an Architects office.	
9BC2. Introduction to Settlement Planning		
1L + 1T/S	M.M. 50	Ex.Hrs.2
Objective:	To understand architecture & building construction technology integrated part of settlement.	
Contents:	<ol style="list-style-type: none"> 1) Definition, planning as an architectural expression and form of developing a human settlement. Theories of city planning, new towns and cities. 2) History of city planning. Concepts of urban space, survey, techniques, zoning and land use, 3) Neighborhood concepts, central business district, site planning, urban and rural housing, 4) Urban transportation, 5) Urban renewal and redevelopment, Present day planning in India. 	
Exercise:	Paper presentation. Site visit to various areas of the city.	
9BC3. Construction Technology for Housing		
1L + 1T/S	M.M. 50	Ex.Hrs.2
Objective:	To understand various construction technology for Housing Projects w.r.t. Sustainability, affordability in Modern Context.	
Contents:	<ol style="list-style-type: none"> 1) To understand the construction technology Materials & Methods 2) Explore the evolved over the period of time. 3) Regional various on Materials Methods, 4) Process of construction and cost. 5) Sustainability and affordability to be the focus area. 	
Exercise:	Prepare the Reports & Compare the materials, methods & processes.	
9BC4. Architecture Design – VI		
11 T/S		M.M. 300
Objective:	Resolution of project to integrate complexity of urban dimensions and architectural language.	
Contents:	Design of complex and large scale projects in urban context. Design must establish linkages with urban structure, urban continuity, structure, landscaping, people and vehicular movements system design, economics, architectural aesthetics and details.	
Project:	Railway Station, Inter State Bus Terminus, Airport or Sports Stadium.	
9BC5. Project Management & Construction Technology studio		
1L + 3 T/S		M.M. 100
Objective:	To study different techniques of construction technology & project management.	
Contents:	<p>Designing a day & time of execution of a project within specific period. The staged process including cost & availability at stages (High rise buildings to be taken). Case studies of similar building erected in different technique and materials of construction, comparison in life, cost & degree of ease or vulnerability.</p> <p>Designs a scheme with a chosen. Technique of construction with all remedial measures.</p> <p>Citing & documenting design & details of any building built on latest enhanced technical construction.</p>	
9BC6. Practical Training Presentation		
2 T/S		M.M. 300
Objective:	To expose student to Architectural practice and construction technology methods, materials and execution.	
Contents:	Student shall work for a period of 140 days in an office of Architect or Builder approved by the department. He shall be submitting monthly work report, critical appraisal of built projects, field documentation of architectural details and site supervision of built projects.	

9BC7. Dissertation

3 T/S

M.M. 200

Objective: Research Study.

Contents: This is an exercise done to develop the activity to carry out the background studies and research by using the research methodologies subject to be chosen by the student should have at least partly some relevance to the Building Construction Technology.

9BC8. Elective-IV

1L + 2T/S

M.M. 100

9BC8.1 Software for Project Management

9BC8.2 Structure Analysis of Typical Structures

9BC8.3 Software for Structural Analysis

Objective: To understand other related dimensions of project management.

SEMESTER-X

YEAR 5

10BC1. Thesis Project

12 T/S

M.M. 500

This is a detailed and specialised design exercise. Projects shall have a focus oriented towards Building Construction Technology Methods or project Management.

**10BC2. Elective -V
(Oriented to thesis subject BMC specifications)**

10BC3. Elective -VI

10BC3.1. Construction Technology for Building Conservation

10BC3.2. Advanced Construction Technology

2L + 3 T/S

M.M. 100

Objective : To understand other related dimensions of Building Construction Technology.