Preamble / Objective

The Bachelor of Architecture degree programme prepares students for professional practice in the field of Architecture. Being an undergraduate programme, it has bright scope, providing exposure to a variety of interests in this field and assisting students to discover their own directions for future development.

There is increasing recognition today of Architecture as an intellectual discipline, both as art& science and as a profession. Through architectural design, Architects make vital contribution in defining and shaping our environment and future of society with the use of appropriate technologies for a diverse range of situations, both in the rural and urban contexts.
Considering the diverse Indian complexities in terms of social, cultural, geographical, climatic, economic and technical aspects, which are unique and typical of every region in our country, the task for profession of Architecture becomes all the more challenging.

Making provision of most optimum and sustainable solutions/ options ,to address the basic needs of living, working and care of body and soul(three basic human functions) of even the poorest of the poor, to lead a productive and dignified life, demand appropriate skills, understanding, knowledge and a deep commitment to professed ideals. Addressing Architectural Design as a comprehensive creative process, this UG programme leading to B. Architecture, is based on the following broad objectives;

a) To stimulate sensitivity and unveil creative talents.

b) To reinforce intellectual capabilities and develop proficiency in professional skills to enable graduates to competently pursue alternative careers, within the broad spectrum of architecture.

c) To provide opportunities to students to try out the role they will eventually play as responsible members of the society, under supervision and interactive guidance.

Keeping in view the above objectives, this programme aims at attaining a high level of excellence in Architectural Design with sound knowledge of Construction. To this end, the Architectural Design and Building Construction & Materials is seen as the core of the programme with supportive inputs from courses in other streams like Professional, Technological and Humanities to built upon a strong foundation of enabling skills in communications , understanding and analysis.. The emphasis is on the development of faculties of discernment and decision-making with the aid of both objective information and subjective attitudes, based on reason and logic.
Architectural Design, being the core discipline of the course has been dealt in detail and major guidelines have been framed regarding the specific content of these courses. Design tests and group design exercise have been introduced so as to aim for both individual and collective excellence in equal measure. Special emphasis will be laid on the organisation of seminars in both compulsory and elective courses in all streams so that students get opportunities in public speaking and become more articulate in direct presentation of their ideas.

Given the complexities of present-day Design projects, the Architect's role is not only that of a team leader but also that of a co-ordinator. He needs to possess a sound knowledge of entire spectrum of technologies which go in the making of state of art built environment, to be able to draw up an integrated framework for activities of the other members of the team, to direct them and to assume overall responsibility for the collective effort. This is manifest in the course in the Technological and professional streams.

CURRICULUM

The curriculum has been structured as five -year, two-stage programme as per the Minimum Standards of Architectural Education Regulations, 1983 issued by the Council of Architecture under the Indian Architects Act, 1972. The **First Stage** would consist of 6 semesters (Three years) of full time study. The **Second Stage** will consist of full-time study for last four semesters (two year).

At the successful completion of the first stage, student shall be eligible for the award of **Bachelor of Building Sciences**, subject to the condition that student scores 50% marks in the aggregate.

B. Arch Degree shall, however, be awarded after completing the entire course spread over ten semesters based on the rules and regulations defined by the university from time to time ,subject to the condition that student scores 50% marks in the aggregate.

The detailed contents of the course are defined below.

Ist SEMESTER B.ARCHITECTURE

TEACHING SCHEDULE & SCHEME OF EXAMINATION-2012

Stream	Code No.	Subject	Lectures	Seminar/ Tutorials	Practical/Field Work	Studio	Total	Max. Marks		Total	**Credits**	Duration of Univ. Exam Viva - Voce/ Practical(Hrs)
								Int. marks	Ext. marks			
Core Subjects	BACH-101	Architectural Design And Theory-I	2	-	-	5	7	100	100	200	**7**	06+University Viva voce. The External marks should be awarded through external jury viva voce
	BACH 102	Building Construction &Materials – I	2	-		4	6	70	70	140	**6**	04
Allied / Supporting Subjects	BACH 103	Architectural Drawing – I	2	-	-	3	5	60	60	120	**5**	04
	BACH 104	Architectural Graphics I	1	-	-	3	4	50	50	100	**4**	04
	BACH 105	Structure Systems – I	2	-	-	-	2	50	-	50	**2**	No Exam
	BACH 106	Workshop I	-	-	2	-	2	40	-	40	**1**	No Exam
	HVPE-101	Human Values & Professional Ethics	3	-		-	3	40	60	100	**3**	03
	BTHU-101	Communicative English	3	-		-	3	40	60	100	**3**	03
	BTHU-102	Communicative Skills Laboratory	-	-	2	-	2	30	20	50	**1**	Internal Viva Voce
TOTAL			**15**	**-**	**4**	**15**	**34**	**480**	**420**	**900**	**32**	

II Semester B. Architecture- Scheme 2012

Teaching Schedule and Scheme of Examination

Stream	Code No.	Subject	Lectures	Seminar/ Tutorials	Practical/Field Work	Studio	Total	Max. Marks		Total	**Credits**	Duration of Univ. Exam Viva - Voce/ Practical(Hrs)
								Int. marks	Ext. marks			
Core Subjects	BACH-201	Architectural Design -II	2	-		5	7	100	100	200	**7**	06+University Viva voce. The External marks should be awarded through external jury viva voce
	BACH 202	Building Construction &Materials – II	2	-		3	5	70	70	140	**5**	04
Allied / Supporting Subjects	BACH 203	Architectural Drawing – II	1	-		4	5	50	50	100	**5**	04
	BACH 204	Architectural Graphics- II1	1	-		3	4	50	50	100	**4**	04
	BACH 205	Theory of Design I	2	-	-	-	2	40	60	100	**2**	03
	BACH 206	History of Architecture- -I	2	1	-	-	3	40	60	100	**3**	03
	BACH 207	Theory of Structure –I	2	1	-	-	3	40	60	100	**3**	03
	BACH 208	Workshop- II	-	-	-	2	2	60	-	60	**2**	No Exam
	EVSC-101	Environmental Science	2	1	-	-	3	40	60	100	**3**	03
		General Fitness								100		Internal Viva Voce
TOTAL			**14**	**3**	**-**	**17**	**34**	**590**	**510**	**1100**	**34**	

III SEMESTER B.ARCHITECTURE
TEACHING SCHEDULE AND SCHEME OF EXAMINATION -2012

Stream	Code No.	Subject	Lectures	Seminar/ Tutorials	Practical/Field Work	Studio	Total	Max. Marks		Total	**Credits**	Duration of Univ. Exam Viva - Voce/ Practical(Hrs)
								Int. marks	Ext. marks			
Core Subjects	BACH 301	Architectural Design – III	2	-		5	7	100	100	200	**7**	06+University Viva voce. The External marks should be awarded through external jury viva voce
	BACH 302	Building Construction & Materials - iii	1	-		4	5	75	75	150	**5**	04
Allied / Supporting Subjects	BACH 303	Architectural Drawing – III	1	-		3	4	50	50	100	**4**	04
	BACH 304	Climate & Architecture – I	2	1		-	3	40	60	100	**3**	03
	BACH 305	Computer Applications –I	1	-	2	-	3	50	50	100	**2**	External Viva Voce
	BACH 306	Structure Systems – II	2	1		-	3	50	-	50	**3**	Internal Viva Voce
	BACH 307	Structure Design –I	2	1		-	3	40	60	100	**3**	03
	BACH 308	Surveying and Leveling - I	1	-	4	-	5	40	60	100	**3**	03
TOTAL			**12**	**3**	**6**	**12**	**33**	**445**	**455**	**900**	**30**	

IV SEMESTER B.ARCHITECTURE

TEACHING SCHEDULE AND SCHEME OF EXAMINATION - 2012

Stream	Code No.	Subject	Lectures	Seminars/ Tutorials	Practical /Field Work	Studio	Total	Max. Marks		Total	**Credits**	Duration (Hrs) Univ. Exam Viva - Voce/ Practical
								Int. marks	Ext. marks			
Core Subjects	BACH 401	Architectural Design – IV	2	-		5	7	100	100	200	**7**	06+University Viva voce. The External marks should be awarded through external jury viva voce
	BACH 402	Building Construction &Materials – IV	1	-		4	5	75	75	150	**5**	04
Allied / Supporting Subjects	BACH 403	Architectural Graphics – III	1	-		2	3	50	50	100	**3**	03
	BACH 404	History Of Architecture – II	2	1		-	3	40	60	100	**3**	03
	BACH 405	Theory Of Design-II	2	1		-	3	40	60	100	**3**	03
	BACH 406	Climate And Sustaniabilty – I	2	1		-	3	40	60	100	**3**	03
	BACH 407	Computer Applications –II	1	-	2	-	3	50	50	100	**2**	External Viva Voce
	BACH 408	Building Services-I	2	1		-	3	40	60	100	**3**	03
	BACH 409	Structure Design – III	2	1		-	3	40	60	100	**3**	03
		General Fitness						100	-	100		As per PTU guidelines
TOTAL			**15**	**5**	**2**	**11**	**33**	**575**	**575**	**1150**	**32**	
			*** Educational Tour**					**One Week Duration During/After Second Year**				

V SEMESTER B.ARCHITECTURE
TEACHING SCHEDULE & SCHEME OF EXAMINATION - 2012

Stream	Subject code	Subject	Lectures	Seminars/ Tutorials	Practical /Field Work	Studio	Total	Max Marks		Total	Credit	Remarks Duration of Exam in Hour
								Int Marks	Ext Marks			
Core subjects	BACH 501	Architectural Design-V	2	-		5	7	100	100	200	**7**	12+University Viva voce. The External marks should be awarded through external jury viva voce
	BACH 502	Building Construction & Materials-V	1	-		4	5	75	75	150	**5**	04
Allied/supporting subjects	BACH 503	History Of Architecture-III	2	1		-	3	40	60	100	**3**	03
	BACH-504	Theory Of Design-III	2	1		-	3	40	60	100	**3**	03
	BACH 505	Landscape Architecture-I	2	1		-	3	40	60	100	**3**	03
	BACH 506	Structure System-II	1	2		-	3	50	-	50	**3**	No Exam Internal Viva
	BACH 507	Building Services-II	2	1		-	3	40	60	100	**3**	03
	BACH 508	Structure Design-IV	2	1		-	3	40	60	100	**3**	03
Total			**14**	**7**		**9**	**30**	**425**	**475**	**900**	**30**	

VI SEMESTER B.ARCHITECTURE
TEACHING SCHEDULE & SCHEME OF EXAMINATION -2012

Stream	Subject code	Subject8	Lectures	Seminars/ Tutorials	Practical /Field Work	Studio	Total			Total	Credits	Remarks Duration of Exam in Hours
								Int Marks	Ext Marks			
Core subjects	BACH-601	Architectural Design-VI	2	-		5	7	100	100	200	**7**	12 + External Viva voce. (The External marks should be awarded through external jury viva voce)
	BACH-602	Building Construction & Materials VI	1	-		4	5	75	75	150	**5**	04
Allied/supporting subjects	BACH-603	History of Architecture-IV	2	1		-	3	40	60	100	**3**	03
	BACH-604	Interior Design-I	2	-		1	3	40	60	100	**3**	03
	BACH-605	Building Services-III	2	1		-	3	40	60	100	**3**	03
	BACH-606	Estimating , costing and specifications-I	2	1		-	3	40	60	100	**3**	03
	BACH-607	Architectural Legislation-I	3	-		-	3	40	60	100	**3**	03
	BACH-608	Structure Design Project		4			4	50	50	100	**4**	External Viva voce
		General Fitness-III						100	-	100		As per PTU guidelines.
Total			**14**	**7**		**10**	**31**	**525**	**525**	**1050**	**31**	

VII SEMESTER B.ARCHITECTURE
TEACHING SCHEDULE AND SCHEME OF EXAMINATION - 2012

Code No.	Subject	Duration of Training	Max. Marks		Total Marks	Credit	Exam	Uni. Viva-Voce
			Int. Marks	Ext. Marks				
BACH-701	Practical Training Programme	One Full Semester	350	150	500	**18**	No Exam	Yes

VIII SEMESTER B.ARCHITECTURE
TEACHING SCHEDULE AND SCHEME OF EXAMINATION -2012

Stream	Code No.	Subject	Lectures	Seminars / Tutorials	Practical /Field Work	Studio	Total	Max. Marks		Total marks	Credits	Duration of Univ. Exam Viva - Voce/ Practical(Hrs)
								Int. marks	Ext. marks			
Core Subjects	BACH - 801	Architectural Design – Vii	2	-		10	12	125	125	250	**12**	No University Exam- The External marks shall be awarded through External jury viva voce
	BACH 802	Building Construction &Materials – VII	2	-		4	6	75	75	150	**6**	04
Allied / Supporting Subjects	BACH 803	Urban Design – I	1	-	4	-	5	40	60	100	**3**	03
	BACH 804	Housing – I	2	1		-	3	40	60	100	**3**	03
	BACH 805	High Rise Buildings – I	2	1		-	3	40	60	100	**3**	03
		Elective – I	2	1		-	3	40	60	100	**3**	03
TOTAL			**11**	**3**	**4**	**14**	**32**	**360**	**440**	**800**	**30**	

ELECTIVE-I (Choose any One from BACH 806 TO BACH 808)

- BACH 806 (EL) - ARCHITERCTURAL CONSERVATION-I
- BACH 807 (EL) – SUSTAINABLE ARCHITECTURE-I
- BACH 808 (EL) - BUILDING MAINTENANCE - I

IX SEMESTER B.ARCHITECTURE
TEACHING SCHEDULE AND SCHEME OF EXAMINATION -2012

Stream	Code No.	Subject	Lectures	Seminars / Tutorials	Practical / Field Work	Studio	Total	Max. Marks		Total marks	Credits	Duration of Univ. Exam Viva - Voce/ Practical(Hrs)
								Int. marks	Ext. marks			
Core Subjects	BACH - 901	Architectural Design – VIII	2	-		10	12	125	125	250	**12**	No University Exam- The External marks shall be awarded through External jury viva voce
	BACH 902	Building Construction &Materials – VIII	2	-		4	6	75	75	150	**6**	04
Allied / Supportin g Subjects	BACH 903	Town Planning – I	2	1		-	3	40	60	100	**3**	03
	BACH 904	Building Economics – I	2	1		-	3	40	60	100	**3**	03
		ELECTIVE –II (One Out Of BACH 905 & BACH 906)	2	1		-	3	40	60	100	**3**	03
		ELECTIVE –III(One Out Of BACH 907 & BACH 908)	2	1		-	3	40	60	100	**3**	03
TOTAL			**12**	**4**		**14**	**30**	**360**	**440**	**800**	**30**	

ELECTIVE-II (anyone of the following)

- BACH 905 (EL) – HILL ARCHITECTURE-I
- BACH 906 (EL) - VERNACULAR ARCHITECTURE -I

ELECTIVE- III (anyone of the following)

- BACH 907 (EL) – TRAFFIC AND TRANSPORTION-I
- BACH 908 (EL) - LANDSCAPE ARCHITECTURE -II

X SEMESTER B.ARCHITECTURE
TEACHING SCHEDULE AND SCHEME OF EXAMINATION -2012

Stream	Code No.	Subject	Lectures	Seminars / Tutorials	Practical /Field Work	Studio /Field work	Total	Max. Marks		Total marks	Credits	Duration of Univ. Exam Viva - Voce/ Practical(Hrs)
								Int. marks	Ext. marks			
Core Subjects	BACH - 1001	Architectural Design – IX (Thesis – Project)	-	-		24	24	300	250	550	**24**	No University Exam- The External marks shall be awarded through External jury viva voce
	BACH 1002	Construction Management –I	3	-		-	3	40	60	100	**3**	03
Allied / Supporting Subjects	BACH 1003	Professional Practice –I	3	-		-	3	40	60	100	**3**	03
	BACH 1004	Disaster Management –I	2	1		-	3	40	60	100	**3**	03
TOTAL			**8**	**1**		**24**	**33**	**420**	**430**	**850**	**33**	

Note :- STUDENT MUST SCORE QUALIFYING MARKS IN THE SUBJECT ARCHITECTURAL DESIGN – IX (THESIS – PROJECT) FOR BEING ELIGIBLE TO OBTAIN A DEGREE IN B.ARCH.

B.ARCHITECTURE-IST SEMESTER-2012
ARCHITECTURAL DESIGN AND THEORY- I
BACH 101

University Exam Marks - 100
Sessional Marks - 100
Duration of Exam - 06 hrs. (Evaluation to be done through viva- voce by external examiner)
No. of contact hrs. - 07per week

INTENT

To introduce Architectural Design to students through Basic Design.
The main aim of the course is to get the students interested in and to familiarize them with the art of design and architecture. To enhance and promote visualization, expressional skills and sensitivity to surrounding environment.
Making student learn the art of collecting data and to carry out analysis for the process of evolving design and individuality of approach.

CONTENTS

Two & Three dimensional Design Exercises involving real and imaginary objects, drawing compositions and models made of matchsticks, cardboard, wires, wood pieces etc. to form an appropriate base for subsequent Architectural design and theory.

UNIT-I

PART A(Theory) Max. Marks -40

1. Introduction to Basic Design
2. Objectives of Design
3. Basic Elements of Design
4. Principles of Design

PART B

1. Scale and proportion in Architecture.
2. Anthropometrics dimensions including physically challenged persons

UNIT-II (Application and Experience) Max. Marks-60

1 2D compositions with basic geometric shapes, color, texture and pattern.
2 Door elevation
3 Carpet design, Backdrop of stage
4 Mural with geometrical shape
5 Floor tile design & paving patterns.
6 Sky line of city/village
7 Experience in 3D Design, compositions with simple forms like cube, cuboids, cylinder, cone, prism etc.

8 Compositions with 3-D Objects. **(Black & white and colours.)**

GUIDELINES

1. **Four questions** are to be set from **unit-I**, two from part A and two from part B and students will be required to attempt **one question from each part**.
2. **Two questions** are to be set from **unit-II** and students will be required to attempt **only one question**.
3. Stress should be given to practically understand the principles of design learnt in theory (**Unit-I**).

NOTE

Evaluation is to be done through viva voce by external examiner appointed by the university at college and answer sheets should be retained at college level.

REFERENCES:

1.....V.S.Pramar, Design Fundamentals in Architecture, Somaiya Publications Private Ltd., New Delhi, 1973.

2.....Francis D.K.Ching, Architecture Form, Space and Order, Van Nostrand Reinhold Company, New York, 1979.

3.....Structure in Nature- Strategy for Design – Peter Pearce

4.....Patterns in Nature- Peter Streens

B.ARCHITECTURE-IST SEMESTER-2012
BUILDING CONSTRUCTION & MATERIALS- I
BACH 102

University Exam Marks - 70
Sessional Marks - 70
Duration of Exam. - 04 Hrs
No. of contact hrs. - 06 per week

INTENT

The overall intent is to study various construction methods in coordination with the Building Materials and science related to them.

CONTENTS

Subject consist of two units-

UNIT – I Building Materials

UNIT - II Construction

UNIT – I BUILDING MATERIALS **Max. Mks.- 25**

Elementary Building Materials

1. The study of constituents, properties, types, available market forms and uses of Bricks, Stones, Cement, Lime and Sand.
2. The study of constituents, properties and uses of Mortar, Lime Mortar, Cement Mortar, Surkhi and Mud Mortar.
3. Surface Finishes - Plastering and Pointing.
4. Teaching Methodology: Site visit to Brick Kiln /Construction site. Market Survey for above said materials with respect to their availability, trade names, market rates etc. Site report should be evaluated and shall form part of the sessional work.

UNIT – II CONSTRUCTION **Max . Mks.- 45**

Brick Masonry

1. Terminology used in Brick masonry,
2. Tools used in Brick masonry.
3. Types of Bats and closers in Brick masonry.
4. Bonds in Brick work. L-junctions, T-Junctions, cross junction in brick masonry (4-1/2", 9", 13-1/2" thick brick walls)
5. Attached & detached Piers in Brick.
6. Arches-Flat, Segmental and Semicircular Arch in Brick masonry.
7. Lintels, sills, coping and threshold details.
8. Design of simple Brick jalli.
9 Stone masonry of various types

GUIDELINES

- **Three questions** are to be set from **unit –I**, and Four questions are to be set from **unit-II**.
- Students will be required to attempt **two questions** from **unit-I and two questions** from **unit-II**.
- Question paper is to be set covering the entire syllabus.

RECOMMENDED BOOKS:

Building construction	**W.B. Mckay vol. 1 to 4**
Construction of buildings.	**R.Barry vol. 1 to 4**
Construction technology	**Chudley vol. 1 to 4**
Building Construction illustrated	**Ching Francis D.K.**
Elementary building Construction	**Michell**
Engineering materials	**Rangwala**
National Building Code	

5. .....

B.ARCHITECTURE-IST SEMESTER-2012
ARCHITECTURAL DRAWING- I
BACH 103

University Exam Marks - 60
Sessional Marks - 60
Duration of Exam - 4hrs.
No. of contact hrs. - 05 per week

INTENT

To familiarize the students with basic knowledge of good drafting and lettering techniques and architectural drawing i.e. orthographic projections of simple geometrical forms.

CONTENTS

UNIT- I Max. Marks-15

- Drafting Technique&, Principles of Drafting,
- Dimensioning and types ofLines
- Lettering (free hand & block lettering)
- Scales & its Use in the Architectural Drawing.

UNIT- II

PART A Max. Marks-25

- Orthographic Projections of the Point, Lines, Planes and Solid in various positions in the First Quadrant.

PART B

- Section of Solids e.g. Cube, Cuboid, Cone, Cylinder, Pyramid, Prism etc.

UNIT- III Max. Marks-20

- Development of Surfaces: Simple Geometrical Solids e.g. Cube, Cuboid, Cone, Cylinder, Pyramid, Prism etc.
- Interpenetration of Solids.

GUIDELINES

- **Two questions** are to be set from **unit I** and **unit III** each . Students will be required to to attempt **one questions from each unit.**

- **Four questions** are to be set from **unit II**, **two question from part A and two from part B.** Students will be required to attempt **one question from each part**.

REFERENCES:

1. .....Engineering Drawing – N.D. Bhatt
2. .....Engineering Graphics – K.R. Mohan
3. .....Engineering Drawing – R.K. Dhawan

B.ARCHITECTURE-IST SEMESTER-2012
ARCHITECTURAL GRAPHICS- I
BACH 104

University Exam Marks - 50
Sessional Marks - 50
Duration of Exam - 04 hrs.
No. of contact hrs . - 04 per week

INTENT

To learn the utility and art of using the potential of Pencil as a powerful tool of Graphic Communication.
To understand the fundamentals, use, role and importance of Colours in Graphics.

CONTENTS

UNIT- I Max. Marks -30

Pencil as an effective presentation tool.

- Free hand line work with different strokes/grades in pencil.
- Effect of light and shade on simple geometrical solids.
- Textures of different building materials in pencil through shading.
- Freehand sketching of human figures, trees and vehicles on an appropriate scale.
- Outdoor sketching of simple building forms.
- Sketches of scenes and activities from memory involving public spaces, markets, festivals, recreational spaces etc.

UNIT-II Max. Marks-20

Poster Colours and its use

- Colour Wheel showing Primary, Secondary and Tertiary colours.
- Colour Schemes & Charts showing Tints and Shades of various colours.
- Effect of colours in relief compositions.

GUIDELINES

- A total of **four questions** are to be set.
- **Three questions** will be from **Unit- I**, out of which students will be required to attempt **two questions**.
- **One compulsory question** is to be set from **Unit- II**.

REFERENCES:

1. .....**Graphic Illustrations in Black and White** by Jaccueline, Design Press, New York, 1991
2. .....**Architectural Rendering**, Crowe Philip- Rofovision S.A.Switzerland, 1991
3. .....**Rendering with Pen & Ink**, Robert W. Gill, Thames & Hudson London, 2008

B.ARCHITECTURE-IST SEMESTER-2012
STRUCTURE SYSTEM- I
BACH 105

University Exam Marks – 00(No University Exam)
Sessional Marks - 50
No. of contact hrs. - 02 per week

INTENT

To inculcate in the student an awareness of basic structural principles used in various building systems.

CONTENTS

UNIT- I

CELLULAR SYSTEM

1. Cell as a natural unit of space.
2. Cell transformation.
3. Polygonal Cellular Systems leading to evolution of Geodesic Domes
4. Applications of Cellular System in Building

UNIT-II

BULK ACTIVE STRUCTURE SYSTEM

Structure acting mainly through material bulk and continuity i.e.. Bulk active structure system / structure systems in bending involving:

1. Slabs (One way & Two way)
2. Beams (Simply supported, Cantilever, Continuous, Vierendale Girders)
3. Grid (Skew & Square Grid)
4. Columns

GUIDELINES

- This course is to be taught as an introduction with special reference to structure in nature viz. Trees, Human body and other examples in which unusual rock formations are created by the forces of nature like wind and water.
- The teaching in this subject must bring out:

1. The predominant pictorial nature of the Architects language.
2. The physical - mechanical essence of the subject matter.
3. The orientation of all Architectural efforts and its relation to form and space.

NOTE

More emphasis while teaching shall be laid on' learning by doing' by students involving making of 3-D models (to give the student different spatial experience and make them understand the basics/principles involved).

REFERENCES:

1. **Order in Space** By Keith Critchlow
2. **Three Dimensional Design** By Richard K.Thomas

B.ARCHITECTURE-IST SEMESTER-2012
WORKSHOP- I
BACH 106

University Exam Marks – 00 (No Exam)
Sessional Marks - 40
No. of contact hrs. - 02 per week

INTENT

To acquaint the students with the basic skills of Carpentry and Brick Masonry.

CONTENTS

TOPICS

- **Carpentry** – Introduction to the use of different types of Tools used in Carpentry.
- **Joints –** Different types of Joints, Joinery details commonly used in Timber construction and interiors.
- **Model**-- Preparation of wooden base for model making.
- **Form Work -** Use of Clay, Brick and Soap for creating three dimensional forms in space.
- **Brick Masonry** – Small brick masonry construction models for understanding of various bonds, jallies etc.
- **Block Making**- Three dimensional building blocks and forms using different materials.

GUIDELINES

Continuous Evaluation shall be made of students work based on various models, assignments and market surveys.

B.ARCHITECTURE- II SEM.
ARCHITECTURAL DESIGN-II
(BACH--201)

Uni.Exam.Marks - 100
Sessional Marks - 100
Duration of Exam. – 06 hours (Evaluation to be done through university viva- voce by external examiner)

INTENT
To appreciate the constraints in the Architectural design of a small building with reference to function, form and structures.

CONTENTs
Importance of physical factors in Architectural design e.g. orientation, ventilation, adequate protection from rain, dust, insects etc. and human dimensions in various postures (in applied form),their relation to everyday utilities like the table, chair, bed, sink etc. Understanding measured drawing of an existing small unit.

TOPICS

- Introduction of physical factors / geographical aspects for basic design.
- The exercise shall be followed by design problem based on the basic climatic aspects and to understand the function of a single unit.
- Design of small buildings involving functional, structure system & constructional methods e.g. Milk booths, Kiosks, Bus stop, Cafes, Drinking water fountains, Canopy, Cycle stand, Security Check post, Installations for Circulation etc.

Minimum 2 -3 exercise to be taken.
All buildings should have accessibility to the physically challenged persons.
Design Teaching Methodology:
The Basic methodology of teaching should be based on

- Library study to understand the basic functions of building and anthropometric.
- Case Study to understand the similar buildings in similar context.
- The emphasis of design should be on the space organisation and built form**.**

GUIDELINES FOR PAPER SETTER

1. One compulsory question is to be set from the entire syllabus
2. The topic of the project is to be displayed on College Notice Board fifteen days in advance.

NOTE : Evaluation is to be done through viva voce by external examiner appointed by the university at college. Answer sheets after the university exam shall be retained at college level for the viva- voce.

REFERENCES:
1. ..... V.S.Pramar, Design Fundamentals in Architecture, Somaiya Publications Private Ltd., New Delhi, 1973.
2. ..... Francis D.K.Ching, Architecture Form, Space and Order, Van Nostrand Reinhold Company, New York,

B.ARCHITECTURE- II SEM.
BUILDING CONSTRUCTION & MATERIALS-II
(BACH--202)

Uni.Exam.Marks - 70
Sessional Marks - 70
Duration of Exam. - 04 hours

INTENT

To study various construction methods in co-ordination with the building materials and science related to them.

CONTENTs

The subject consists of two units-
UNIT - I Building Materials with emphasis on learning of materials.
UNIT - II Building Construction with emphasis on construction drawings by pencil only.

UNIT-I BUILDING MATERIALS **Max. Marks.-20**

(a) Timber: Types, Seasoning , Defects and Decay and Uses of Timber
(b) Iron and Steel –Study of composition of Cast iron, Steel and Wrought Iron with properties and uses in buildings
(c) Water proofing:- Water proofing materials(liquid, semi liquid and solid) – Composition, Properties , Applications.
(d) Surface finishes:-White wash, Distemper, Paints and Varnishes- Types, Applications, Suitability, Advantages and Disadvantages.

UNIT-II BUILDING CONSTRUCTION **Max. Marks. 50**

(a)Foundation and Damp proof course

- Types of Foundations and its important details.
- Application of Damp proof course, its material and laying. Detailing of Horizontal and Vertical D.P.C.

(b) Doors

- Introduction to Joints in Carpentry.(Different Types of Joints, Joinery details)
- Types of Doors
- Design and construction details of Framed ,Ledged, Braced & Battened Door, Flush Door, Wire mesh Door, Panelled Door

(c) Windows

- Types of Windows in timber, Design and Construction details of Casement, Bay, Clearstory, Corner window etc.

(d)Construction of roof

- R.C.C, R.B.C. Roof & Jack Arch Roof, Tiled and Battened Roof, I- Channel Roof.
- Concepts of water proofing & Thermal Insulation of Roofs.

(e) Section through Single Story of load bearing structure and Frame structure.

GUIDELINES FOR PAPER SETTER

1. **One compulsory question** containing 5 question of 2 marks (10 Marks) , each requiring short answers, are to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively)
2. **Three questions** are to be set from UNIT-I and students are required to attempt any two questions.
3. **Three questions** are to be set from UNIT-II and **students are required to attempt two questions.**
4. Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

Note

Emphasis should be laid on making students understand complete construction details of single story structure.

References:

Mckay W.B.; BuildingCconstruction . Vol. 1 to 4
Barry R.; Construction of Buildings.- Vol. 1 to 4
Chudley; Construction Technology- Vol. 1 to 4
Ching Francis D.K; Building Construction illustrated
Michell ; Elementary Building Construction-
Rangwala ; Engineering Materials
National Building Code- 2005

B.ARCHITECTURE- II SEM.
ARCHITECTURAL DRAWING-II
(BACH--203)

Uni.Exam.Marks - 50
Sessional Marks - 50
Duration of Exam. - 04 hours

INTENT:-To familiarize the students with learning techniques & skills in representing different objects through 3D geometry and developing visualisation of 3-D , for using in the design solutions.

CONTENT:- To familiarize students with the 3-dimensional drawings of the building and perspective views.

UNIT-I Isometric/ Axonometric projections

- Isometric /Axonometric of simple forms.

UNIT – II Perspective Drawing :- Introduction to theory of Geometrical Perspective Drawing.

- Perspective by Side Elevation Method.
- Angular (Two Point Perspective) and Parallel (One Point Perspective) Perspective.
- Perspective of different Solids and Building elements
- Perspectives having more than 2 Vanishing Points.

GUIDELINES FOR PAPER SETTER

1. **Two question are to be set from each unit** . **Student would be required to attempt one question from each section**.
2. Proper-dimensioned drawing is to be supplied to the student for the examination (i.e. Plan, Elevations and Position of Picture Plane, Station Point and Horizon line etc.

References:

- Gill Robert W.; Rendering with Pen and Ink.
- Bhatt N.D.; Engineering Drawing.
- Ching Franc D.K ; Architectural Graphics.
- Dhawan R.K; Engineering Drawing

B.ARCHITECTURE-II SEM.
ARCHITECTURAL GRAPHICS-II
(BACH--204)

Uni.Exam.Marks - 50
Sessional Marks - 50
Duration of Exam. - 04 hours

INTENT:-To develop conceptual and perceptual skills, in different media and techniques.
CONTENT:-Rendering in Pencils and Colour media.

UNIT-I -Pencil Crayons and Oil Pastels as presentation medium

- Rendering of various surfaces such as brick, stone, grass, timber etc.
- Trees, Human figures, Automobiles, Lamp Posts, Street furniture in **Plan, Elevation and Perspective**.
- Rendering of View / Perspective in Crayons and Oil Pastels.

UNIT-II-Water Colour Rendering.

- Outdoor free hand sketching and Colour rendering of Trees, Shrubs, Vegetation, Buildings, Vehicles etc.
- Colour Rendering of various scenes such as Garden Scene, Street Scene, Lake Scene, Village Scene, etc.
- Sketching of Furniture pieces, parts of Building in relation with Human Scale and Proportions.
- Color Wheel.

GUIDELINES FOR PAPER SETTER

Four questions are to be set, with Two question from each Unit The students are required to attempt Two questions selecting One from each Unit.
Questions should be related to Buildings and its surroundings.

References:

- Crowe Philip; Architectural Rendering
- Albert & Habe ; Architectural Rendering
- Jaxtheim ; How to Paint & Draw

..

B.ARCHITECTURE-II SEM.
THEORY OF DESIGN-I
(BACH-205)

Uni. Exam Marks - 60
Sessional Marks - 40
Duration of Exam. - 03 hours

INTENT :- To establish the Role and Importance of Theory of Design as a broad, comprehensive activity to help students appreciate the difference between a responsible opinion and a well reasoned judgement by looking at the design in depth and in a critical way .

CONTENT

UNIT-I Principles of Architecture Design
Primary Elements of Design such as Point, Line, Planes and Volume.
Study of forms

UNIT-II

Visual Properties of Forms.
Regular and Irregular Forms.
Transformation of Forms.
Formal Collision of Geometry.
Articulation of Forms

UNIT-III

Form defining Space with Horizontal Elements and Vertical Elements.
Quality of Architectural Space.
Organization of Form and Space, Spatial Organization.
Circulation Elements including Approach, Entrance, Configuration of the Path, Path- Space Relation, Form of the Circulation Space.
Proportion and Space.

GUIDELINES FOR PAPER SETTER

1. **The examiner is required to set Eight Questions with minimum Two Questions from Each UNIT**
2. **Students are required to attempt Five Questions with minimum One Question from each UNIT**

References:

- Form, Space and order- D.K.Ching.
- Design strategies in Architecture- Geoffery H. Baker (An approach to the analysis of Form)
- Theory of Design-Parmar

B.ARCHITECTURE- II SEM
HISTORY OF ARCHITECTURE-I
(BACH-206)

Uni. Exam. Marks - 60
Sessional Marks - 40
Duration of Exam. - 03 hours

INTENT:- To make student understand how different Architectural Solutions were evolved (in successive historical periods) within the limitation imposed by prevalent Social and Religious Customs, available Building Materials , Climate of region/Topography, Complex Structural Problems and the limited Technology available at the time**.**

CONTENT:- Study of World Architecture from the Early Stage to the Early Roman Period , Early Era of Indian Architecture to the Buddhist Architecture.

For each of the topic given in syllabus, stress is to be laid on Architectural characters with only one or two representative examples to highlight those features.

UNIT-I- Introduction and importance of History of Architecture

- A brief introduction to Primitive/ Prehistoric Architecture.
- Egyptian Civilization and its Architecture in terms of various building typologies-- Mastabas, Pyramids, Temples, Palaces, Public Buildings etc.
  Early Mesopotamian and Assyrian Architecture-Religious & Public Buildings—Citadels, Ziggurats, Hanging Gardens etc.
- Greek Civilization & Architecture—including Religious/ Civic Buildings /Market Place(Acropolis) of importance. Stress should be laid on
  understanding the basic Principles of Architecture including Proportions and Theory of Orders

UNIT-II- Introduction to Indus Valley Civilization & its Architecture—Citadels, Granary, Housing, Baths etc.

- Vedic Architecture.
- Buddhist Architecture- Stupas, Viharas, Chaitya Halls etc.

GUIDELINES FOR PAPER SETTER

1. One Compulsory Question containing 6 question of 2 marks (12 Marks) each, requiring short answers, are to be set from the entire syllabus.

2. Total Eight Questions are to be set from entire syllabus.

3. **Students should attempt total five Questions including compulsory question**..

NOTE:-Emphasis should be laid on understating of building evolution and form. Continuous evaluation shall be made of students work based on various models, assignments and sketching.

References:

Fletcher Banister; A History of Architecture
Brown Percy ; History of Architecture , Buddhist and Indian
Grover Satish; History of Architecture-Hindu & Buddhist Period
Fergusson James; History of Eastern Architecture
Tad gill. Indian Architecture

B.ARCHITECTURE- II SEM.
THEORY OF STRUCTURES -I
(BACH-207)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. - 03 hours

INTENT:-Developing Material Skills in students to Analyse and Understand Fundamentals and Working of various parts of different Structural Systems.

CONTENT:- Basics of structure mechanic to help make students understand the entire Structure .

UNIT-I • Aims, Objects and Scope of study of Theory of Structures for Architects.

• Technical names and function of various Structural Components from Foundation to Roof.

• Fundamentals of Mechanics.

• Indian Standard Codes.

• Various types of Gravitational and Lateral Loads (I.S. 875) such as Dead, Live, Wind, Earthquake etc. their impact and effect on Structures.

UNIT-II

- Type of Forces, Cause- Effect , Concurrent Forces, Coplanar Forces and Parallel Forces. Triangle Law of Forces, Parallelogram Law of Forces, Equilibrium of Forces, Concept of Resultant, Conditions of Equilibrium by Analytical and Graphical Methods, Beam reactions graphically and analytically, Statically Equilibrium.
- Link Polygon, method of Construction, Resultant of Concurrent Forces, Coplanar Forces System

UNIT- II

- Centre of Gravity, Definition, Centroid, Centre of Gravity of Plane Figures, Centre of Gravity by Method of Moments, Centre of Gravity by Graphical and Analytical methods.
- Moment of Inertia; MI of Plane Area, MI by Method of Integration, MI of Rectangular Section, Theorem of Parallel and Perpendicular Areas.

UNIT-IV

- Moment of Resistance, Theory of Bending, Bending Stresses, Equation of Theory of Bending, Sectional Modulus of Rectangular and Circular Sections.

UNIT- V

- Analysis of Perfect Frame, Classification of Frames, Stress, Strain, Assumption, Method of Section, Method of Joints, Design
- example, Young Modulus, Shear Modulus, Bulk Modulus and relation between them.

UNIT- VI

- Bending Moment/ Shear Force, Type of Supports, Loads and Beams, Relation between SF and BM, BM and SF diagram for Cantilever and Simply Supported Beams with Pointed Load Uniformly Distributed Load--Design examples.

GUIDELINES FOR PAPER SETTER

1. One Compulsory Question containing 6 question of 2 marks (12 Marks) each, requiring short answers, are to be set from the entire syllabus.

2. Total Eight Questions are to be set from entire syllabus.

3. **Students should attempt total five Questions including compulsory question**..

NOTE:

REFERENCES:

Arya . A. S -Theory of Structure

Khurmi-Structure Mechanics

Rajput- Strength of Materials

Prof.Harbhajan Singh-Theory of Structure

B.ARCHITECTURE- II SEM.
WORKSHOP-II
(BACH-208)

Uni. Exam. Marks - No exam
Sessional Marks - 60
Duration of Exam. – Internal Viva Voce

INTENT

To make students aware of various Model Making Techniques and to familiarize them with the Art of Sculpture Making using Different Materials.

CONTENT

Introduction to Basic Model Making Techniques with Paper, Paper Board, Woods, Plaster of Paris and Soap for Basic Design and Architecture Design Studio .

UNIT-I-Product design

Design & Model Making of Furniture, Lamp shades and other Interior & Exterior Elements

UNIT-II-Sculpture Making

Sculptures in Plaster of Paris, Wires, Scrap, Wood, Soap etc.

UNIT- III-Clay Modelling

Pinching
Coiling Techniques
Slab Techniques

UNIT –IV-Model Making

Model Making ---Making of Study Model of one of Design Project done during the Semester.
or of a Small Buildings

GUIDELINES FOR PAPER SETTER

Continuous Evaluation shall be made of students work based on various Models, Assignments and Market Surveys.

Evaluation will be made based on the Student's work during Semester in Internal Viva-Voce conducted by two internal examiners.

B.ARCHITECTURE- II SEM.
ENVIRONMENTAL SCIENCE
(EVSC 101)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. - 03 hours

Objective/s and Expected outcome:

Upon successful completion of the course, students should be able to:

1. Measure environmental variables and interpret results
2. Evaluate local, regional and global environmental topics related to resource use and management
3. Propose solutions to environmental problems related to resource use and management
4. Interpret the results of scientific studies of environmental problems
5. Describe threats to global biodiversity, their implications and potential solutions

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SECTION-A

Introduction: Definition and scope and importance of multidisciplinary nature of environment. Need for public awareness. **(2)**

Natural Resources: Natural Resources and associated problems, use and over exploitation, case studies of forest resources and water resources. **(4)**

Ecosystems: Concept of Ecosystem, Structure, interrelationship, producers, consumers and decomposers, ecological pyramids-biodiversity and importance. Hot spots of biodiversity **(4)**

Environmental Pollution: Definition, Causes, effects and control measures of air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards. Solid waste Management: Causes, effects and control measure of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies. Disaster Management : Floods, earthquake, cyclone and landslides. **(5)**

SECTION-B

Social Issues and the Environment From Unsustainable to Sustainable development, Urban problems related to energy, Water conservation, rain water harvesting, watershed management. Resettlement and rehabilitation of people; its problems and concerns. Case studies. Environmental ethics: Issues and possible solutions. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.

Wasteland reclamation. Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of pollution) Act. Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation Public awareness **(5)**

Human Population and the Environment, Population growth, variation among nations. Population explosion – Family Welfare Programme. Environment and human health, Human Rights, Value Education, HIV/AIDS. Women and child Welfare. Role of Information Technology in Environment and human health. Case studies **(4)**

Suggested Readings/ Books:

1. Agarwal, K. C. 2001 **Environment Biology**, Nidi Publ. Ltd. Bikaner.
2. Jadhav, H & Bhosale, V.M. 1995. **Environment Protection and Laws**. Himalaya Pub House, Delhi 284p.
3. Rao M. N. & Datta A.K. 1987. **Waste Water Treatment**. Oxford & IBH Publ. Co. Pvt. Ltd. 345 p.
4. **Principle of Environment Science** by Cunninghan, W.P.
5. **Essentials of Environment Science** by Joseph.
6. **Environment Pollution Control Engineering** by Rao, C.S.
7. **Perspectives in Environmental Studies** by Kaushik, A.
8. **Elements of Environment Science & Engineering** by Meenakshi.
9. **Elements of Environment Engineering** by Duggal.

B. ARCHITECTURE-III SEM.
ARCHITECTURAL DESIGN-III
(BACH-301)

Uni.Exam.Marks - 100
Sessional Marks - 100
Duration of Exam. – 06 hrs. (Evaluation to be done through viva- voce by external examiner)

INTENT

- To make students understand and appreciate the constraints in the designing of a building of a small scale with reference to function, form and structure.

CONTENT

- To create awareness about the role and Importance of physical factors in Architectural Design e.g. orientation, ventilation, adequate protection from natural elements and human dimensions in various postures (in applied form),their relation to everyday utilities including table, chair, bed etc.

TOPICS

- Design of House, Primary School, Cafeteria, Post Office etc without urban regulatory controls with emphasis on environmental and ecological issues.
- Introduction to barrier free buildings.

INSTRUCTIONS TO THE TEACHER

- Minimum two projects/ assignments to be handled by students **individually**.
- Library and prototype studies should be carried out for other projects in groups.
- Model and perspective should be made integral part of project presentation.
- Stress should be laid on the understanding the basics of process of design.

GUIDELINES FOR PAPER SETTER

- One compulsory question is to be set from the entire syllabus

NOTE

- Evaluation is to be done through viva voce by external examiner appointed by the university at college.
- Answer sheets after exam shall be retained by the college.

REFERENCE BOOKS:

- Ching, Frank (Francis D.K.), "*Architecture: Form, Space & Order*, Publisher John Wiley, Hoboken 2007.
- Parmar V.S, "Design Fundamentals, Publisher-Somaiya Publisher Pvt. Ltd, Mumbai 1997.
- Scott Van Dyke, "Form, Line to Design, Publisher-Van Nostrand Reinhold, 1990.
- Scott R, "Design Fundamentals, Publisher-Robart E. Krieger Publishing Company
- E&OE- Architects Hand Book and Planning
- Donald Watson , Michael J. Crosbie, "Time Saver Standard, 8th edition.

B. ARCHITECTURE-III SEM.
BUILDING CONSTRUCTION AND MATERIALS-III
(BACH-302)

Uni.Exam.Marks - 75
Sessional Marks - 75
Duration of Exam – 04 hrs

INTENT

- To make students understand and appreciate, various methods of building construction in coordination with the building materials and science related to them.

CONTENT

- Subject consists of two units-
  UNIT - I Building Materials- with emphasis on learning of material.
  UNIT - II Building Construction- with emphasis on construction drawings by pencil only.

UNIT-I BUILDING MATERIALS

(a) Glass

- Glass as a building material.
- Classification, Composition, Properties and Use of Glass.
- Character and uses of various types of Glass - Plate Glass, Wired Glass, Foam Glass, Laminated Glass, Tinted Glass, Glass Wool, Glass Block, Fibre Glass, Crinkle Glass, Obscured Glass etc.

(b) Timber Products

- Manufacturing process and qualities of Decorative and Commercial Veneers including Plywood, Particleboard, Fibreboard, Gypsum board, Batten board, Rice husk board, and Bamboo board.

UNIT-II BUILDING CONSTRUCTION

1. Section of a Double Storeyed Building through Toilet and Stair case showing the details of Foundation, Floor, Window, Lintel, Chhajja, R.C.C Roof, Terrace and Parapet.

(A) Types of Staircases-- Design and detailing of RCC and Timber Staircases.
(B) R.C.C. Form work and Shuttering details for-

- Column (square and round)
- Slab and Beam
- Wall
- Staircase

2. Flooring

- Construction of PCC, Terrazzo, (Cast-in-situ and tiles) and various types of Stone flooring.

3. Cladding

- Cladding of interior and exterior facades in various materials such as Brick, Tiles, Stone and Panelling

- Market Survey to study complete range of products available in the market under different trade names with their manufacturing details, specifications and performance.
- Field visit to study the complete process of lying of reinforcement and concreting.
- Preparing Construction plates on above topics
- Emphasis shall be laid on understating of complete construction details of Double Storyed structure.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively)
- Three questions are to be set from UNIT-I and students are required to attempt two questions.
- Three questions are to be set from UNIT-II and students are required to attempt two questions.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCES BOOKS

a) Building Materials

- Rangwala S.C, "Engineering Materials, Charotar Publishing House, India
- TTTI , "Engineering Materials,. Publisher-Tata McGraw-Hill Education, 2001
- Deshpande -Engineering Materials
- National Building Code 2005

b) Building Construction

- MICHELL, "ELEMENTARY BUILDING CONSTRUCTION, Published by B T Batsford Ltd, London , 1961
- PUNMIA B.C. , "BUILDING CONSTRUCTION,
- MCKAY W.B. , "BUILDING CONSTRUCTION (VOL 1-4) , Longmans, U.K 1981
- BARRY R. , "CONSTRUCTION OF BUILDINGS(VOL. 1-4) Oxford : Blackwell Scientific, 1999
- CHUDLEY R. , "CONSTRUCTION TECHNOLOGY (VOL. 1-4) Longmans, UK 1981
- CHING FRANCIS D.K. , "BUIL. CONSTRUCTION ILLUSTRATED, John Wiley, New York 2003

B. ARCHITECTURE-III SEM.
ARCHITECTURAL DRAWING-III
(BACH-303)

Uni.Exam.Marks - 50
Sessional Marks - 50
Duration of Exam. – 04 hrs .

INTENT

- To make students learn the techniques to represent different objects through 3D geometry and developing skill for visualization of 3-D geometric forms for use in Architectural designing.

CONTENT

- Familiarizing with the 3-dimensional drawings of the building with Sciography.

Topics

UNIT-I

- Sciography in Plans and Elevations
- Sciography in Axonometric Projection

UNIT-II

- Perspective by Grid Point method and Measuring Line method.
- Sciography in Perspectives (both one point & two point perspectives)

GUIDELINES FOR PAPER SETTER

- Two questions are to be set from each unit. Students would be required to attempt one question from each section.
- Proper-dimensioned drawings are to be supplied to the students along with question paper in examination (i.e. Plan, Elevations and Position of Picture Plane, Station Point and Horizon line

REFERENCE BOOKS:

- N.D. Bhatt V.M. Panchal, "Engineering Drawing, Charotar Publisher 48th edition, 2005
- Ching, Frank (Francis D.K.), "Architectural Graphics, Van Nostrand Reinhold, 5th ed. 2009
- Robert W Gill, "Manual of Rendering with Pen and Ink, Published on: 1990-04
- Fraser Reeki, "Reekie's Architectural Drawing, Tony K. McCarthy Wiley, Aug1995

B.ARCHITECTURE-III SEM.
CLIMATE AND ARCHITECTURE - I
(BACH – 304)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students understand the role and importance of climate as one of the major determinant of built form and to familiarize them with various climate controlling devices.

CONTENT

UNIT –I Fundamentals

- Introduction to climatology
- Importance of studying Building climatology
- Elements of climate
- Global climate factors
- Interrelationship of climatic elements and Psychometric chart

UNIT -II Movement of Sun

- Understanding the movement of Sun
- Solar Chart and its importance
- Importance of understanding the optimum orientation of buildings and their forms in relation to Sun
- Concept and Design of Shading Devices

UNIT –III Thermal Comfort

- Definition and explanation of Thermal Comfort
- Human Heat Balance and Physical Comfort
- Relationship of Climatic Elements with Thermal Comfort
- Thermal Stress Index
- Bio-climatic Chart, Effective Temperature and Corrected Effective Temperature Histogram with their uses

UNIT –IV Climatic Zones

- Tropics and its Climatic zones
- Macro and Micro Climate(site climate)
- Role of Climate with respect to Shelter
- Study of various Indigenous Shelters in response to various Climate Zones in the Tropical belt of India
- Principles of Architectural Design in different Climatic Zones in India (As per National Building Code)

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answers type containing 5 questions of 2 marks each (10 Marks) is to be covering entire syllabus

- Two questions are to be set from each UNIT and students are required to attempt One question from each unit.
- Students are required to attempt five questions
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS

- Koensberger, Ingersoll, Mayhew,Szokolay , "Manual of Tropical Housing & Building, March 1974
- C.P. Kukreja,"Tropical Architecture,Tata McGraw-Hill Publishing Company, 1978.
- Martin Evans, "Housing, Climate & Comfort, Architectural Press, 1980.
- Lippsmeier, Georg, "Building in the Tropics, Callwey Verlag, Munchen, 1980
- Gideon S. Golany, "Design for Arid Regions, Publication Van Nostrand Reinhold, New York 1983.
- B.Givoni, "Man, Climate & Architecture, Von Nostrand Reinhold Company New York - 1981
- Reserch notes on climate:- C.B.R.I, Roorkee
- Krishan A,Baker, "Climate Responsive Architecture, McGraw-Hill Education (Asia) Co. and China Architecture & Building Press. 2004/2005
- Energy Efficient Buildings in India:- TERI

B.ARCHITECTURE-III SEM.
COMPUTER APPLICATIONS - I
(BACH – 305)

Uni.Exam.Marks - 50
Sessional Marks - 50
Duration of Exam. – External Viva Voice

INTENT:

- To make students aware of the role and importance of Computers in the field of Architecture.

CONTENT:

- Teaching basics of Computers including introduction to basic hardware, operating systems and operative languages.

TOPICS

- Basic commands like copy, paste, stretch, offset, move fillet, extend, trim and other 2D commands.
- 2D modelling in Auto Cad, Auto Cad Revit, Google Sketch up,
- Drawing the basic Plans, Sections, and Elevations.
- Basic Text writing and dimensioning of the Plans, Elevation and Sections.
- Basic hatching and filling of the Walls in the Plans, Elevations and Sections.
- Basic rendering in the Auto Cad and in other Softwares in 2D.

GUIDELINE TO TEACHER

- The small building plans to be promoted and evaluated at the end of the semester.
- Emphasis should be laid on understating of building 2 D Drawings and techniques for the single as well as multistoried buildings.

GUIDELINES FOR EXAMINER

- The evaluation of student shall be based on the written questions to be set from the course and the practical conducted based on a specific problem given to know the student's understanding of the Computers in the field of Architecture.

REFERENCE BOOKS:

- AutoDesk , "Auto Cad Manual 2012"
- Google, "Google Sketch up Manual"
- Microsoft, " MS DOS"

B.ARCHITECTURE-III SEM.
STRUCTURAL SYSTEM-II
(BACH -306)

Uni.Exam.Marks - Nil
Sessional Marks - 50
Duration of Exam. – Internal Viva Voce.

INTENT

- To make students aware about basic principles applicable in various structural systems.

CONTENT

- To make students learn basics of structure with emphasis on learning by doing and making 3-D models to provide the student with different spatial experience.

TOPICS

UNIT - I

- Structures acting mainly through Composition of Compression and Tension members such as Vector-active structure system in co-active tension and compression in;

a) Space frames.
b) Trusses (Timber & Steel).
c) Domes (Ribbed & Geodesic)

UNIT - II

- Structure acting mainly through Material Bulk and Continuity i.e..Bulk Active Structure System or Structure Systems in Bending in:

a) Slabs (One way & Two way)
b) Beams (Simply supported, Cantilever, Vier-endale Girders)
c) Grid (Skew & Square Grid)

TEACHING METHODOLOGY

- The teaching in this subject must bring out:

a) The predominantly pictorial nature of the Architect's language.
b) The physical-mechanical essence of the subject matter.
c) The orientation of all Architectural efforts to Form and Space.

NOTE: Evaluation is through Internal Viva Voice of the work done by the student during the semester.

REFERENCE BOOKS:

- Engel H, "Structure Systems"
- Salvadori Mario, "Building of Building"
- Butler Robert B, "Architectural Engineering Design: Structural Systems"
- Schierle G G, "Architectural Structure"
- Moore Fuller, "Understanding Structure"

B.ARCHITECTURE-III SEM.
STRUCTURE DESIGN- I
(BACH – 307)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT :

- To make students understand the Role and Importance of Structure in Built Environment and to create skill among students to apply the knowledge gained regarding structural design in an applied project and to make buildings structurally safe .

CONTENT:

- This course is foundation course for the student

Unit-I

- Design of Foundations in Masonry work-- Safe Bearing Capacity , Load on Foundations, Depth of Foundation, Rankine's formula, Footing Sections .

Unit-II

- Design of Retaining Walls in Masonry-- Loads, Resultant Pressure, Stability of Structure, Middle Third Rule, Design examples.

Unit-III

- Design of Columns and Walls in Masonry-- Allowable Stress, Cross- Sectional Area Factor, Shape factor, Slenderness Ratio, Effective Height/Length, Effective Thickness, Load Factor, Design examples

Unit-IV

- Design of Simple Timber Beam, Bending Stress Check, Shear Check, Deflection Check, Bearing Check, Design examples with UDL and Concentrated load.

Unit-V

- Design of Truss Members for given Load, Compressive Stress, Tensile Stress etc

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answers type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus
- In addition, Eight questions are to be set from the entire syllabus
- Students are required to attempt in all five questions
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- R. K. Bansal, "Engineering Mechanics & Strength of Materials Publisher, Laxmi Publications Pvt Limited, 1998.
- Applied Mechanics:- K.L.Rao
- J. C. Mehta,"Applied Mechanics, Publisher: Delhi, New Asian Publishers 1963.
- Stephen Timoshenko, "Strength of Materials, Publisher, Van Nostrand, New York 1955.

B.ARCHITECTURE - III SEM.
SURVEYING AND LEVELLING-I
(BACH-308)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students understand and learn about and basics of surveying and levelling and its application in the art and science of designing buildings

CONTENTS:

1. **Introduction :-**
- Different types of surveys.

2. **Chain Surveying** :-
- Principal of chain surveying description of different equipment, Methods of chaining and booking, selection of base line and stations, obstacles in chaining. Location of inaccessible points by chain, Ranging rods.

3. **Prismatic Compass survey: -**
- Description of Prismatic & surveyors compass methods of traversing, local attractions and its elimination, adjustment of closing error by graphical method.

4. **Plane Table survey: -**
- Description of different equipment, different methods of plane tabling, Strength of Fix, Two point and three point problems and their solutions.

5. **Levelling: -**
- Description of dumpy and tilting levels & levelling staves, methods of levelling, Sensitivity of bubble tube, setting out grade lines, permanent adjustment of levelling instruments.

6. **Contouring: -**
- Setting out contour gradient, different method of contouring. Simple earthwork ,calculations of areas and volumes.

7. **Minor Instruments: -**
- Box sextant, Hand level, Abney level, Plane meter, Ghat tracer, Tangent Clinometers, etc.

8. **Total Station**
- Introduction, Various components, Operation, Advantages/ Disadvantages

TEACHING METHODOLOGY

- Subject shall be taught by a teacher who has practical experience of carrying out field surveys while working on Architectural /Engineering Projects. The teaching shall be supported by undertaking actual surveys of any area/ building in and around the campus to give exposure to the students. All the equipment , stated above, shall be made available to the students by setting up of a Survey lab.

GUIDELINES TO EXAMINER

- One compulsory question of short answer type of 10 Marks are to be set from the entire syllabus
- The examiner is required to set eight questions.
- Students are required to attempt five questions.

REFERENCE BOOKS:

- Singh Narinder, “Surveying & leveling”
- T.P.Kanetkar Surveying & leveling:-
- Punmia B C, “Surveying & leveling”
- Kuchhar C L, “Surveying & leveling”
- Kanetkar & Kulkarni, “ Surveying & leveling”
- Sahiwney P B, “Surveying & leveling”

IV Semester Syllabus - 2012

B.ARCHITECTURE–IV SEM.
ARCHITECTURAL DESIGN–IV
(BACH-401)

Uni.Exam.Marks - 100
Sessional Marks - 100
Duration of Exam. – 06 hrs . (Evaluation to be done through viva- voce by external examiner)

INTENT

1. To make students appreciate the elements of vernacular/rural Architecture of a particular Region of the state of Punjab.

CONTENTS

2. Study of the Social and Physical environment and methods of construction in Vernacular/Rural Architecture, emerging out of the traditional way of life of the people in a given place .

TOPICS

3. Design and study of Rural, Vernacular, Historical Settlements/buildings of distinct Architectural characteristics including detailing with physical planning and other systems.

BUILDINGS

(a) Community Buildings Bank, Post office, Panchayat Ghar, Rural Dispensary, Farmer's House, Gaushala, Village Dairy Farm, Rural School etc.)

NOTE:-All buildings should have accessibility to the physically challenged persons.

TEACHING METHODOLOGY

- Minimum two projects/assignments should be handled by students during the semester including detailed study of a representative village .
- Village study shall be done in groups to clearly bring out the existing settlement pattern, socio-economic conditions, pattern of life, building typology, materials/building technology used and important Architectural features. The end product shall be a well documented report and drawings.
- Library/case study shall be made integral part of every
- Model and perspective will be made compulsory in each assignment.

GUIDELINES FOR PAPER SETTER

- One compulsory question is to be set from the entire syllabus
- Evaluation is to be done through viva voce by external examiner appointed by the university at college and answer sheets should be retained at college level.

REFERENCE BOOKS :

- Ching, Frank (Francis D.K.), "Architecture : Form,Space & Order", Publisher John Wiley, Hoboken 2007.
- Parmar V.S, "Design Fundamentals, Publisher-Somaiya Publisher Pvt. Ltd, Mumbai 1997.
- Scott Van Dyke, "Form, Line to Design, Publisher-Van Nostrand Reinhold, 1990.
- Scott R, "Design Fundamentals, Publisher-Robart E. Krieger Publishing Company
- E&OE- Architects Hand Book and Planning
- Donald Watson , Michael J. Crosbie, "Time Saver Standard, 8th edition

B. ARCHITECTURE - IV SEM.
BUILDING CONSTRUCTION & MATERIALS-IV
(BACH-402)

Uni.Exam.Marks - 75
Sessional Marks - 75
Duration of Exam. – 04 hrs

INTENT

- To make students understand and appreciate, various methods of building construction in coordination with the building materials and science related to them.

CONTENT

- This subject consists of two units

UNIT - I Building Materials with emphasis on learning of material.

UNIT - II Building Construction with emphasis on construction drawings by pencil only.

TOPICS

UNIT-I:-BUILDING MATERIALS

(A) Roof-Coverings - Constituents, Properties, Uses, Process of Laying of Roof Covering Materials e.g. G.I. Sheets, Asbestos Cement Sheets (Plain & Corrugated) with accessories, Clay Tiles - Country, Allahabad & Mangalore Tiles etc.

(B) Floor Coverings- Constituents, Properties, Uses and Process of Laying of Floor Covering Materials e.g. Linoleum, Cork Sheet, Parquette, Rubber (Tiles and Sheets) and Types of Stone Flooring.

(C) Plastic - Introduction, Advantages, Properties, Types and Uses as Building Material . Thermoplastics, Polythene, P.E.(Low density and high density) Poly Venyl Chloride, P.V.C. Polystructure P.S. Application of plastics in Buildings.

UNIT-II BUILDING CONSTRUCTION

Roofs and Trusses (Timber)

- Introduction to different types of Roofs e.g. Flat, Couple, Close Couple, Collar, Lean-to and Double Lean- to roofs.
- Principles of Construction and Details of King Post and Queen Post Trusses with Gutters, Eaves and Ridge Details with / without Soffit and Roof Covering.
- Timber Built up Trusses of various Spans.
- Doors & Windows - Design and Details of Sliding Doors, Sliding and Folding Doors in Timber.
- Timber partition, glass block partition ,timber panelling
- Timber Staircase-Design and Details
- Dhajji Wall Construction

TEACHING METHODOLOGY

- Field/ Project visits to study the uses of various materials in construction industry and process of laying Floor/Roof Coverings, Staircases and Doors and Windows ..
- Preparing Construction plates on above topics
- Market study of the products available under different trade names with details of
- their manufacture, specification and performance.

GUIDELINES

c) One compulsory question of short answer type 5 question of 2 marks (10 Marks) each are to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively)

d) Three Questions each are to be set from UNIT-I and UNIT-II. Students are required to attempt Two questions from each Unit..

e) Questions paper is to be set covering whole of the syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

a) Building Materials

- Rangwala S.C, "Engineering Materials, Charotar Publishing House, India
- TTTI , "Engineering Materials,. Publisher-Tata McGraw-Hill Education, 2001
- Deshpande -Engineering Materials
- National Building Code 2005

b) Building Construction

- MICHELL, "ELEMENTARY BUILDING CONSTRUCTION, Published by B T Batsford Ltd, London , 1961
- PUNMIA B.C. , "BUILDING CONSTRUCTION,
- MCKAY W.B. , "BUILDING CONSTRUCTION (VOL 1-4) , Longmans, U.K 1981
- BARRY R. , "CONSTRUCTION OF BUILDINGS(VOL. 1-4) Oxford : Blackwell Scientific, 1999
- CHUDLEY R. , "CONSTRUCTION TECHNOLOGY (VOL. 1-4) Longmans, UK 1981
- CHING FRANCIS D.K. , "BUIL. CONSTRUCTION ILLUSTRATED, John Wiley, New York 2003

B.ARCHITECTURE - IV SEM.
ARCHITECTURAL PRESENTATION–III
(BACH-403)

Uni.Exam.Marks - 50
Sessional Marks - 50
Duration of Exam. – 03 hrs

INTENT

- To make students aware and develop Conceptual and Perceptual skills, in different media and techniques.

CONTENTS

- Rendering in Pencils and Colour media.

UNIT-I Pen & Ink Rendering

- Use of Pen & Ink Rendering to show Texture of Grass, Brickwork, Stone work, Sky, Trees, Human figures etc.
- Stencilling in Ink
- Calligraphy Handwriting

UNIT-II Colour Rendering

- Use of all Colour Mediums to render Complexes /Buildings with Trees, Automobiles, and Roads
- Rendering of Design Problem in any Colour Medium
- Cut & Paste method for making Compositions & for Rendering Perspectives

TEACHING METHODOLOGY

- Students will be made to experiment with Pen , Pencil and Colours to draw/ render objects, landscape elements, buildings and components which form integral part of built environment both indoor and outdoor.
- Teaching of the subject shall be made integral part of Architectural Drawing Projects.

GUIDELINES FOR PAPER SETTER

- Two Questions each are to be set from UNIT-I and UNIT-II. Students are required to attempt One question from each Unit.

REFERENCE BOOKS:

- Ching, Frank (Francis D.K.), "Architectural Graphics, Van Nostrand Reinhold, 5th ed. 2009
- Gill Robert W, "Manual of Rendering with Pen and Ink, Published on: 1990-04
- Visual Design-A Problem Solving Approach:- LallinCarref
- Bhagwat Gajanan Desai A, "Visual Art & Basic Study, Somaiyya Publication
- Creative Colour:- Faber Bissen
- Gerritsen Frans, "Theory of Practice of Colours, Publisher, Cengage Learning, 1975

B. ARCHITECTURE-III SEM.
HISTORY OF ARCHITECTURE-II
(BACH-404)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students understand how different architectural solutions were evolved (in successive historical periods) within the constraints/limitations imposed by prevalent social and religious costumes, available building materials, prevailing climate, topography, complex structural problems and building technology available at the time**.**

CONTENT

- Study of world Architecture from the early stage to the Early Roman period besides the early era of Indian Architecture and Buddhist Architecture.

TOPICS:

UNIT-I

Roman Architecture

- Christian Architecture
- Byzantine Architecture
- Romanesque Architecture

UNIT-II

- Chulkyan and Ashoka period of Hindu Architecture
- Dravidian Architecture
- Indo Aryan Architecture
  - Orissa
  - Gujrat
  - Khajuraho

TEACHING METHODOLOGY

- For each period given in syllabus, stress is to be laid on the Architectural character and elements of Architecture with only one or two representative examples to highlight those features
- Emphasis should be laid on understating of evolution of buildings and form. Continuous evaluation shall be made of students work based on various models, assignments and sketching

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answers type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus
- Four questions are to be set from each UNIT and students are required to attempt two questions from each unit.
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Fletcher Banister, "A History of Architecture, University **of** London, The Antholone Press, 1986.
- A History of Architecture :- James Fergusan, John Willey
- Fergusan James, Willey John, "History of Indian & Eastern Architecture, Dodd,Mead & company 1899
- Tagdell Christopher, "The History of Architecture in India, Phaidon Press,1994

B.ARCHITECTURE – III- SEM
THEORY OF DESIGN-II
(BACH-405)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs .

INTENT

- To make students understand the complex Architectural problems and appreciate the basic principles / philosophy of design used by Masters of modern architecture to achieve optimum solutions and to assess their contributions by their own criteria.

CONTENT

- Understanding the basic concepts of designing the buildings by the Master Architects

TOPICS

Unit -- I

- Louis Sullivan, *the Skyscraper* and *Form Follows Function*.
- Frank Lloyd Wright and *Organic Architecture*.
- Walter Gropius, the Bauhaus and the Architects Collaborative(TAC)

Unit – II

- Mies Van der Rohe and his Dictum "*Less is More"*
- Works of Le-Corbusier.
- Works of Alvar Alto

TEACHING METHODOLOGY

- For each Master Architect given in syllabus, stress is to be laid on the his life, history, approach , philosophy and Architectural works including character and elements of Architecture developed with representative examples to highlight those features
- Emphasis should be laid on understating of evolution of buildings and form. Continuous evaluation shall be made of students work based on various assignments and sketching.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answers type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus
- Three questions are to be set from each UNIT and students are required to attempt two questions from each unit.
- Students are required to attempt five questions
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Ching, Frank (Francis D.K.), "*Architecture: Form, Space & Order*, Publisher John Wiley, Hoboken 2007
- Design strategies in Architecture Geoffery:- H. Baker
- (An approach to the analysis of Form
- Global Architecture (ADA Aditia Tokyo) Vol - 2, 3 & 4.

- Fletcher Banister, "A History of Architecture, University **of** London, The Antholone Press, 1986.
- Mies Vander Rohe by David Spaeth.
- Mies Vander Rohe by Karin Krisch.
- The Frank Lloyd Wright Companion by William Allin Storrer.
- Frank Lloyd Wright- The Masters Works by David Larkin & Bruce.
- Le Corbusier by H.Allen Brooks.

B.ARCHITECTURE -IV SEM.
CLIMATE & SUSTAINABILITY-II
(BACH-406)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To acquaint the students and make them aware of the concept of climate as a significant determinant of built forms and to familiarize them with various climate controlling devices.

CONTENTS

UNIT -I Ventilation in Buildings

- Ventilation - Introduction and its mechanism
- Wind Movement
- Air movement within and around buildings, effect of surrounding elements and pattern of wind flow.
- Guidelines for designing well ventilated buildings
- Optimum Orientation of Building—Importance, Form and Placement of Building

UNIT -II Solar Radiations

- Introduction to basic Thermal Units
- Theory of Heat Flow, Heat Transmission etc.
- Thermal Properties of various Building Materials .
- Solar Radiations- Movement of Sun, Method of Recording, Radiation Gains by various Materials
- Study of various Landscape Elements and Solar Passive Devices for Climatic Control within Buildings
- Introduction to Ecotech and Design Builder Software.

UNIT-III : SUSTANIBILITY

- Sustainability - Concept ,Definition, Importance and Scope
- Sustainable Buildings- Concept, Importance, Approach ,Design Principles and Advantages
- Introduction to ECBC Codes,
- Introduction to GRIHA.
- Introduction to Energy Demand and Consumptions.
- Energy Saving Technique in Buildings.
- Alternate Energy Sources in India.

TEACHING METHODOLOGY

- Teaching in the subject shall be made a combination of guest lectures by Experts, visits to the existing Green Buildings, attending seminars organised by the Professional Bodies/ others and preparing Models/ Charts to make students familiar with use of natural elements as essential input to design sustainable buildings

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks are to be set from the entire syllabus
- The examiner is required to set two question from Unit –I and three questions each from unit II and Unit III- total Eight Questions.
- Students are required to attempt five questions with minimum one from each UNIT

REFERENCE BOOKS:

- Koensberger, Ingersoll, Mayhew,Szokolay , "Manual of Tropical Housing & Building, March 1974
- C.P. Kukreja,"Tropical Architecture,Tata McGraw-Hill Publishing Company, 1978.
- Martin Evans, "Housing, Climate & Comfort, Architectural Press, 1980.
- Lippsmeier, Georg, "Building in the Tropics, Callwey Verlag, Munchen, 1980
- Gideon S. Golany, "Design for Arid Regions, Publication Van Nostrand Reinhold, New York 1983.
- B.Givoni, "Man, Climate & Architecture, Von Nostrand Reinhold Company New York - 1981
- Reserch notes on climate:- C.B.R.I, Roorkee
- Krishan A,Baker, "Climate Responsive Architecture, McGraw-Hill Education (Asia) Co. and China Architecture & Building Press. 2004/2005
- Energy Efficient Buildings in India:- TERI

B.ARCHIECTURE -IV SEM.
COMPUTER APPLICATIONS–II
(BACH-407)

Uni.Exam.Marks - 50
Sessional Marks - 50
Duration of Exam. – No Exam (External Viva Voice)

INTENT

- To make students aware of the role and importance of Computers in the field of Architecture

CONTENT

- Being advance learning course ,students will be introduced to 3D- and rendering techniques of the buildings.

UNIT –I

- 3-D Modelling on Auto cad of Single Story and Multi Story Buildings,
- 3-D Modelling of Multiple Building in a Single Site, Camera View of the Buildings,
- 3-D Modelling on 3-D Max.
- View on Google Sketch Up

UNIT -II

- Rendering of the View on any of the following Software
  - 3D- Max,
  - Photoshop,
  - V-ray and
  - Any other Software.

UNIT -III

- Basic of Animation on Google Sketch up /3D-Max

TEACHING METHODOLOGY

- Emphasis should be laid on developing the skill pertaining to 3-D on the Softwares

GUIDELINES FOR PAPER SETTER

- The evaluation of student shall be based on the written questions to be set from the course and the practical conducted based on a specific problem given to know the students understanding of the Computers in the field of Architecture related to course contents defined above.

B.ARCHITECTURE-IV SEM.
BUILDING SERVICES-I
(BACH- 408)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students learn and understand the requirements of Building Services and their application to buildings with focus on Water Supply, Drainage and Sanitation

CONTENTS

UNIT-I -WATER SUPPLY

- Water- Role & Importance, Sources ,Quality ,Impurities.
- Water Supply- Introduction, Basic Principles, Systems of Water Supply
- Water Storage – Systems, Capacity and Location.
- Calculation of Water consumption.
- Domestic, hot and cold water supply systems.
- Pipes- Size and their jointing details.
- Fittings- sanitary fittings like Ferrule, Stopcock, Bibcock etc.
- Metering- Various kinds of Water Meters and connections.

UNIT-II - SANITATION

- Sanitation- Role, Importance , Basic principles of disposal of waste from buildings.
- Dry and Wet Carriage Systems.
- Sanitary Fittings-- Wash basins, WC's, Bath Tubs, Sink, Urinals, Bidets, Flushing Cistern, Traps etc.
- Various types of joints
- Septic Tanks, Treatment Plants.
- Manholes, Chambers- Purpose, Location, Structure and Ventilation
- Drainage Systems- Types, Advantages/Disadvantages -- separate, combined and partially combined systems.
- Stack system--One pipe and two pipe systems.
- Testing of Drains.
- Gradients-- Purpose and Principle for laying Drains and Sewers. Self -cleansing and non-scouring velocities
- Size of Drain Pipes and Materials used.

UNIT-III ----STORM WATER DISPOSAL

- Types of Roads-WBM (water bound macadam) Road-Tar, Bitumen, Asphalt and RCC roads.
- Description and Suitability of Roads for Storm Water Drainage with Comparative Cost Analysis.
- Pavements- Types (Soil stabilized, Brick and Stone paving), Use, Advantages/Disadvantages
- Drainage- Sub- drains, Culverts, Ditches, Gutters, Drop inlets and Catch Basins.
- Rain Water Disposal for individual buildings.
- Rain Water Harvesting

TEACHING METHODOLOGY

- Subject shall be taught through the combination of Guest Lectures, Field visits, Visits to the Project Sites , actual display of Fittings, Pipes, Joints used and by carrying out exercises in layout of simple drainage systems for Small buildings, Planning of Bathrooms and Lavatory Blocks in Domestic and Multi-storied buildings
- .Exercises shall be clubbed with Design Studio Project

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks are to be set from the entire syllabus
- The examiner is required to set eight questions with minimum two from each UNIT
- Students are required to attempt five questions with minimum one from each UNIT

REFERENCE BOOKS:

- DUGGAL K.N. , "PUBLIC HEALTH SERVICE, Publisher, Chand, 1967
- WATER SUPPLY SANITATION BY R.BIRDI
- BARRY R, "BUILDING SERVICES, John Wiley and Sons Ltd 1998
- GARG S. K, "WATER SUPPLY ENGINEERING, Khanna Publishers
- WATER SUPPLY& SANITATION:- G.S BINDRA/ J.S..BINDRA

B.ARCHITECTURE - IV SEM.
STRUCTURE DESIGN - III
(BACH-409)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students understand the Role and Importance of Structure in Built Environment and to create skill among students to apply the knowledge gained regarding structural design in an applied project and to make buildings structurally safe with focus on RCC

CONTENT:

Unit-I- Beam

- Design of Single Reinforced Beams, Doubly Reinforced Beams, Cantilevered Beam,
- Depth/ Thickness of Section Area of reinforcement,
- Steel Shear Check, Shear Reinforcement
- Introduction to T- Beams and L- Beams.
- Design Examples

Unit-II- Slab

- Design of One Way Slab ,Depth/Thickness of Section Area of Reinforcement, Shear Check
- Design of Two Way Slab
- *ly /lx* ratio
- I S 456 Code- provisions and their check,
- Design Examples.

Unit-III Staircase

- Design of Dog legged Stair;
- Design of Tread and Riser,
- Different bonding,
- thickness of Waist slab/Landing slab, area of reinforcement,
- Design Examples

Unit-IV-Columns

- Design of Columns,
- Long /Short Columns,
- Basic Equation of Design
- IS 456 Code Provisions,
- Section of Column,
- Longitudinal and Lateral Reinforcement.
- Design Examples.

Unit-V Footings

- Design of Isolated Square and Rectangular Footings in Depth Frame
- Consideration of Bending Moment

- One Way Shear, and Two Way Shear Area of reinforcement,
- Design Examples.

GUIDELINES FOR PAPER SETTER

- Total ten question are to be set. Two questions from each unit.
- Students shall be required to attempt total five questions ,with One question from each unit.

REFERENCE BOOKS:

- I S 456 CODE BOOK
- RCC:- Krishna Murthy
- RCC:- V.K. Shah
- Jain A.K. , "RCC, Lakshmi Publication (P) LTD
- Rani Vazi, "RCC, Khanna Publishers New Delhi. 2000

V Semester Syllabus - 2012

B.ARCHITECTURE – V SEM.
ARCHITECTURAL DESIGN-V
(BACH- 501)

Uni.Exam.Marks - 100
Sessional Marks - 100
Duration of Exam. – 12 hrs . (Evaluation to be done through viva- voce by external examiner)

INTENT:

- To make students understand the components of the design of a multi functional public building involving circulation and interrelation of different parts and the context of multi- disciplinary approach towards the complexity in structure & services.

TOPICS
Design of structures of simple and normal complexity and detailing of buildings such as:

Unit – I: Hotels, Motels, Restaurants, Hostels, Club Houses etc.

Unit- II:Institution and Public Buildings- Museum, Libraries and Court Houses etc.

NOTE: All buildings should have accessibility to the physically challenged persons

TEACHING METHODOLOGY

- Minimum one building from each unit shall be taken in class as the design Project.
- Emphasis shall be given to promoting creative skill along with other design considerations.
- The study of similar buildings shall be made integral part of design, duly supported by models and perspectives
- Library study shall be carried out in groups.

GUIDELINES FOR PAPER SETTER

- One compulsory question is to be set from the entire syllabus
- Evaluation is to be done through viva voce by external examiner appointed by the university at college and answer sheets should be retained at college level.

REFERENCE BOOKS :

- Ching, Frank (Francis D.K.), "Architecture : Form,Space & Order", Publisher John Wiley, Hoboken 2007.
- Parmar V.S, "Design Fundamentals, Publisher-Somaiya Publisher Pvt. Ltd, Mumbai 1997.
- Scott Van Dyke, "Form, Line to Design, Publisher-Van Nostrand Reinhold, 1990.
- Scott R, "Design Fundamentals, Publisher-Robart E. Krieger Publishing Company
- E&OE- Architects Hand Book and Planning
- Donald Watson , Michael J. Crosbie, "Time Saver Standard, 8th edition

B.ARCHITECTURE – V- SEM.
BUILDING CONSTRUCTION & MATERIALS-V
(BACH-502)

Uni.Exam.Marks - 75
Sessional Marks - 75
Duration of Exam. – 04 hrs

INTENT:

- To make student study and understand various constructional details in metals i.e. Steel & Aluminium in co-ordination with study of materials & science related to them.

UNIT-I : BUILDING MATERIALS

- The study of manufacturing process, casting, characteristics, form and uses of Cast Iron, Wrought Iron, Steel, Stainless Steel, Aluminium, copper and as building materials.
- Properties and applications of copper, titanium and carbon fiber.
- Various structural members, Sections and Joinery in Steel, Aluminium and PVC.

UNIT-II: BUILDING CONSTRUCTION

a) Steel, Aluminium, and PVC

- Doors and windows
- Frames
- Sliding door

b) Aluminium, and PVC

- Partition Walls

c) Steel Trusses

- Steel Trusses
- Constructional details of Simple Truss, North Light Truss

d) Constructional details of Steel flooring, Steel, beams, Column (stanchions), Grillage Foundation & Staircase details.

TEACHING METHODOLOGY

- Field visits to study the uses of metals in construction industry and process of laying of Steel Trusses, Aluminium and Pre-stressed.
- Study of Joinery of metals in workshop.
- Preparing Construction plates on above topics.
- Market study of the products available under different trade names with details of their manufacture, specification and performance.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answers type containing 5 question of 2 marks each (10 Marks) are to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively).
- Three questions each are to be set from UNIT-I and UNIT-II and students are required to attempt two questions from each unit.
- Questions paper is to be set covering whole of the syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

a) Building Materials

- Rangwala S.C, "Engineering Materials, Charotar Publishing House, India
- TTTI , "Engineering Materials,. Publisher-Tata McGraw-Hill Education, 2001
- Deshpande -Engineering Materials
- National Building Code 2005

b) Building Construction

- MICHELL, "ELEMENTARY BUILDING CONSTRUCTION, Published by B T Batsford Ltd, London , 1961
- PUNMIA B.C. , "BUILDING CONSTRUCTION,
- MCKAY W.B. , "BUILDING CONSTRUCTION (VOL 1-4) , Longmans, U.K 1981
- BARRY R. , "CONSTRUCTION OF BUILDINGS(VOL. 1-4) Oxford : Blackwell Scientific, 1999
- CHUDLEY R. , "CONSTRUCTION TECHNOLOGY (VOL. 1-4) Longmans, UK 1981
- CHING FRANCIS D.K. , "BUIL. CONSTRUCTION ILLUSTRATED, John Wiley, New York 2003

B.ARCHITECTURE – V SEM.
HISTORY OF ARCHITECTURE-III
(BACH-503)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students understand how different architectural solutions were evolved (in successive historical periods) within the constraints/limitations imposed by prevalent social and religious costumes, available building materials, prevailing climate, topography, complex structural problems and building technology available at the time**.**

UNIT-I

- Gothic Architecture
- Renaissance Architecture- Origin, growth and development in Europe
- Mannerism - Basic contents and its impact on the development of Architecture
- Baroque & Rococo style.

UNIT-II

- Architecture of Imperial or Delhi style under various rulers.
- Architecture of Provincial Styles
- Architecture of Mogul period

TEACHING METHODOLOGY

- For each of the period given in syllabus, stress is to be laid on making students understand the Architectural Characters/ features , building evolution and form with only one or two representative examples to highlight those features.
- Continuous evaluation shall be made of students work based on various models, assignments and sketching.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks are to be set from the entire syllabus
- Total Eight questions are to be set. Four questions from each unit
- Students should attempt total five questions with Two Questions from each Part.

REFERENCE BOOKS:

- Brown P, "History of Architecture Buddhist and Indian, Taraporevala and sons, Bombay, 1983.
- Grover Satish, "Islamic Architecture in India, CBS Publishers & Distributors 2010
- Fletcher Banister, "A History of Architecture, University **of** London, The Antholone Press, 1986.
- A History of Architecture:- James Fergusan, John Willey
- Fergusan James, Willey John, "History of Indian & Eastern Architecture, Dodd, Mead & company 1899

B.ARCHITECTURE – V- SEM.
THEORY OF DESIGN-III
(BACH-504)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students drive deeper into the Architecture problems and look for directive principles guiding the philosophy of design used by masters of modern Architecture and to assess their contribution by their own criteria.

CONTENTS

UNIT- I: FOREIGN ARCHITECTS

1.Louis I.Kahn
2.Eero Sarinen
3.Philip Johnson
4.Paul Rudolph
5.John Utzon
6.Kenzo Tange
7. Laurie Baker

UNIT-II : INDIAN ARCHITECTS

1. A.P.Kanvinde
2. C.M. Correa
3. B.V.Doshi
4. J.A.Stein
5. U.C.Jain
6. Raj Rewal

TEACHING METHODOLOGY

- For each of the Architect given in syllabus, stress is to be laid on making students understand the contribution made by the Architect through the Architectural Characters/ features, building evolution and form developed with representative examples to highlight those features.
- Continuous evaluation shall be made of students work based on various models, assignments and sketching.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks are to be set from the entire syllabus
- The examiner is required to set eight questions with minimum two from each UNIT
- Students are required to attempt five questions with minimum one from each UNIT

REFERENCE BOOKS:

- M.U.Jogelekar -Contemporary Indian Architecture Housing and urban development.
- Global Architecture-Vol.-1,2,3,4.
- Encyclopedia of Architecture
- Kanvinde A.P. Campus planning in India.
- Moderen Architecture Since 1900.

B.ARCHITECTURE - V SEM.
LANDSCAPE ARCHITECTURE-V
(BACH-505)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students understand the elements of Landscape Design and its application in Architectural Design solutions.

TOPICS

UNIT –I

- Introduction to Landscape Architecture.
- Elements of Landscape design and its relation to the built environment
- Plant characteristics, plant propagation and impact of climate, soil and manure.
- Structure, Colour, Form, Foliage of various types of Trees, Shrubs, Cacti Bushes and Creepers etc.
- Identification and study of a few Indian plants and trees.

UNIT –II: Study on comparative basis of development of landscape design through history:

- Indian Gardens
- Persian Gardens
- Mogul Gardens
- Japanese Gardens
- Italian Gardens
- French Gardens
- English Gardens

TEACHING METHODOLOGY

- Teaching shall be imparted through a combination of lectures by subject experts, visits to the historical gardens developed over the period, landscape projects of repute, study of native and other trees etc
- Continuous evaluation shall be made of students work based on assignments and sketching.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks are to be set from the entire syllabus
- Total Eight questions are to be set. Four questions from each unit
- Students are required to attempt a total of five questions.

REFERENCE BOOKS:

- Reid Grant W, "Landscape Graphics"
- Littlewood Michael, "Landscape Detailing"
- Harris and Dines, "Time Saver Standard for Landscape Architecture"- Plants of India
- Tony Russel & Catherine Cutler, "Trees- An Illustrated Identifier and Encyclopedia"
- Simonds, "Landscape Architecture"

- Laurie Michael, “Introduction to Landscape Architecture”
- Watts Rajnish/Dhillon Harjit/Chhattar Singh, “Trees of Chandigarh”
- Krishan Pradip, “Trees of Delhi”
- Bose D K/ Sharma S P/ Chaudhaury B, “Tropical garden plants in colors”
- Randhawa M S, “Flowering Trees and Shrubs of India”
- Randhawa M S, “Beautifying India”

B.ARCHITECTURE - V SEM.
STRUCTURE SYSTEM-III
(BACH-506)

Uni.Exam.Marks - No Exam
Sessional Marks - 50
Duration of Exam. – No Exam

INTENT

- To inculcate and promote among students an awareness of structural principles involved in various building systems.

TOPICS

UNIT –I: Form Active Structural System or Structural System in Simple Stress Conditions:

a) Cable Structures (Roofs, Bridges etc.)
b) Tents Structures
c) Pneumatic Structure.

UNIT –II: Surface active Structure System:

a) Shells.
b) Folded Plates.

UNIT-III

(a) Vertical Structure System for High Rise Buildings.

TEACHING METHODOLOGY

- Emphasis shall be laid on learning by doing by making of 3-D models to give the students an idea of different spatial experience.
- The teaching in this subject must bring out:
  (i) The predominantly pictorial nature of the Architects' language.
  (ii) The physical - mechanical essence of the Subject matter.
  (iii) The orientation of all Architectural efforts to Form and Space.

EVALUATION METHODOLOGY

- Evaluation of students shall be done by an Internal Jury constituted by the Director/ Principal of the Institute based on the Viva- voce and the work done by the students in terms of models etc.
- The internal marks will be split into 30 marks awarded by the internal jury and 20 marks by the subject teacher.

REFERENCE BOOKS:

- Engel H, "Structure Systems"
- Salvadori Mario, "Building of Building"
- Butler Robert B,"Architectural Engineering Design: Structural Systems"
- Schierle G G, "Architectural Structure"
- Moore Fuller, "Understanding Structure"

B.ARCHITECTURE - V SEM.
BUILDING SERVICES –II
(BACH-507)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students understand the basics and application of complexity of problem involving Electrical and Mechanical Services in buildings and how to make buildings safe against Fire

CONTENTS

UNIT-I ELECTRICAL SERVICES

- Electricity- Ohm's , Kirchhoff's Laws and basic Principles.
- Electric Circuits-- Series and Parallel.
- Domestic installations- Water heater, Radiator etc.
- Wires- Specifications /Carrying capacity , Electrical loads.
- Types of Switches, Sockets and Fixtures.
- Distribution Boards, Circuit Breakers, Fuses, Electrical Meters and their layout.
- Design considerations for Electrical Installations from generation to distribution(Energy Flow Diagram).
- Protection against Overload, Short circuit, Earth fault, Lightening and other safety measures for buildings.
- Wiring systems- Materials, Types/Methods of wiring

UNIT-II ILLUMINATION

- Light - Propagation, Reflection, Radiation, Transmission and Absorption.
- Illumination –Laws, Measurement, Luminous Intensity, Brightness, Luminance Flux, Glare and their effect.etc.
- Illumination Schemes- Types and their design considerations.
- Light Flux method for calculation of number of lamps for illumination.
- Lamps-Incandescent, Sodium Vapour, Mercury Vapour, Fluorescent and Neon lamps etc.
- Types of Luminaries for interior and exterior lighting.
- Residential, commercial, industry, flood and street lighting.
- Testing before commissioning of electrical services.

UNIT-III: FIRE SAFETY

- Fire—Causes, Spread, Combustibility of Materials and Safety Norms.
- Fire Detection/Warning- Equipment including Smoke Detectors, Monitoring Devices, Alarm Systems. Etc.
- Fire Fighting— Planning, Designing, Installations, Equipment, Operation and Maintenance.
- Design Criteria for Fire Exit and Escapes in High Rise Buildings.

UNIT-IV- MECHANICAL CIRCULATION

- Lifts-Types, Control and Operation, Carrying Capacity, Rated Load, Rated Speed,

RTT etc.

- Lift - Sections, Machine Room, Components, Lift Well and Lift Pit.
- Design Standards - Lifts Lobby, Lift Cars etc
- Escalators and Conveyors- Installation and Planning Requirements

TEACHING METHODOLOGY:

- Teaching methodology will be a combination of guest lectures from subject experts, Lectures and Site Visits/ Visits to the project Sites and Studio Exercises. Teaching shall also be w.r.t. provisions of NBC(National Building Code)
- Exercises shall be clubbed with Design Studio Project

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks are to be set from the entire syllabus
- Total Nine questions are to be set with Two Questions from Each Part
- Students are required to attempt Five Questions with One Question from Each Part

REFERENCE BOOKS:

- BARRY R, "BUILDING SERVICES, John Wiley and Sons Ltd 1998.
- National Building Code:-B I S
- Sustainable Building Design Manual:- TERI
- Jain V. K . , "Handbook of Designing and installation of Services in Buildings, Khanna publishers
- Environmental Engineering:- N.N.Basak

B.ARCHITECTURE-V SEM.
STRUCTURE DESIGN -IV
(BACH-508)

Sessional Marks - 60
Uni.Exam.Marks - 40
Duration of Exam. - 03 hrs.

INTENT:

- To make students aware about the design methodology adopted and principles involved in designing the structural elements used in the built environment with focus on steel

CONTENTS

Unit-I-**COMPRESSION MEMBER**

Design of Compression members subjected to axial loading involving:

- Effective length,
- Radius of gyration,
- Slenderness ratio,
- Permissible Stresses
- Design examples.

Unit-II--**STEEL BEAM**

Design of Steel Beams and Sections on the basis of:

- Bending Stress,
- Shear Check,
- Deflection,
- UDL
- Concentrated Load.

Unit III --STEEL TRUSS

Design of Steel Truss Members for:

- Given Loading;
- Compression Factor,
- Tensile Forces.

Unit IV--FOUNDATIONS

Design of Grillage Foundation for Isolated Steel Column Section for:

- Bending Stresses,
- Shear Check
- Web Crippling Check,
- Design examples.

Unit –V---RIVETED/WELDED JOINTS

- Riveted Connections
- Different types of Rivets,
- Type of Riveted Joints,
- Failure of Riveted Joints,
- Efficiency of Riveted Joint ,
- Welded Connections

- Different types of Welds,
- Advantages/Disadvantage of Welded/ Riveted connections.

TEACHING METHODOLOGY

- Teaching in the subject shall be with reference to the provisions of latest ISI code
- Emphasis shall be on making students understand the principles and systems involved in various topics

GUIDELINES FOR PAPER SETTER

- Ten questions are to be set with Two Question from each Part.
- Students are required to attempt Five Questions with One Question from each part

REFERENCE BOOKS:

- I S 800 CODE BOOK
- STEEL STRUCTURE DESIGN by VAZIRANI
- STEEL STRUCTURE DESIGN by JAIN

VI Semester Syllabus - 2012

B.ARCHITECTURE – VI SEM.
ARCHITECTURAL DESIGN-VI
(BACH-601)

Uni.Exam.Marks - 100
Sessional Marks - 100
Duration of Exam. – 12 hrs (Evaluation to be done through viva- voce by external examiner)

INTENT

- To make students understand the principles and approach to the designing of complexes in the context of urban design, environmental components and urban services.

CONTENT

- Design of Public Buildings with complex functional demands and technical inputs. Nature of urban complexes, scale and other elements of urban design to be incorporated.

TOPICS

- The design program to include:

a) Auditorium, Cinemas, Theatres, Multiplex.
b) Specialized Laboratories and Housing
c) Study of an urban complex as a prototype so as to have a basic knowledge of various aspects in planning with focus on urban activity, services and construction methods along with social aspects, growth and change

GUIDELINES FOR PAPER SETTER

- One compulsory question is to be set from the entire syllabus

EVALUATION METHODOLOGY

- Evaluation is to be done through viva voce by external examiner appointed by the university at college.
- Answer sheets should be retained at college level for the viva voce examination .

REFERENCE BOOKS :

- Ching, Frank (Francis D.K.), "Architecture : Form,Space & Order", Publisher John Wiley, Hoboken 2007.
- Parmar V.S, "Design Fundamentals, Publisher-Somaiya Publisher Pvt. Ltd, Mumbai 1997.
- Scott Van Dyke, "Form, Line to Design, Publisher-Van Nostrand Reinhold, 1990.
- Scott R, "Design Fundamentals, Publisher-Robart E. Krieger Publishing Company
- E&OE- Architects Hand Book and Planning
- Donald Watson , Michael J. Crosbie, "Time Saver Standard, 8th edition

B.ARCHITECTURE - VI SEM.
BUILDING CONSTRUCTION & MATERIALS-VI
(BACH-602)

Uni.Exam.Marks - 75
Sessional Marks - 75
Duration of Exam. – 04 hrs .

INTENT

- The overall intent is to make students understand construction/detailing of work associated with interior finishes and works.

TOPICS

UNIT-I

- Complete working drawings of a residential building including Site plan, Floor plans, Elevations, Sections, and Services showing-
  - Constructional details of Kitchen
  - Constructional details of Toilets
  - Built in Furniture (Cup boards etc.)
  - Staircase
  - Joinery details

UNIT-II

Temporary construction work

- Shoring
- Underpinning
- Scaffolding

TEACHING METHODOLOGY

- Site visits to construction sites
- Preparing Construction plates on above topics.

GUIDELINES FOR PAPER SETTER

- Two questions are to be set from each Unit.
- Students are required to attempt Three Questions with One question from each Unit.

REFERENCES BOOKS:

a) Building Materials

- Rangwala S.C, "Engineering Materials, Charotar Publishing House, India
- TTTI , "Engineering Materials,. Publisher-Tata McGraw-Hill Education, 2001
- Deshpande -Engineering Materials
- National Building Code 2005

b) Building Construction

- MICHELL, "ELEMENTARY BUILDING CONSTRUCTION, Published by B T Batsford Ltd, London , 1961
- PUNMIA B.C. , "BUILDING CONSTRUCTION,
- MCKAY W.B. , "BUILDING CONSTRUCTION (VOL 1-4) , Longmans, U.K 1981
- BARRY R. , "CONSTRUCTION OF BUILDINGS(VOL. 1-4) Oxford : Blackwell Scientific, 1999
- CHUDLEY R.,"CONSTRUCTION TECHNOLOGY (VOL. 1-4) Longmans, UK 1981
- CHING FRANCIS D.K. , "BUIL. CONSTRUCTION ILLUSTRATED, John Wiley, New York 2003.

B.ARCHITECTURE – VI SEM.
HISTORY OF ARCHITECTURE-IV
(BACH-603)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students understand how different architectural typologies/ solutions were evolved (in successive historical periods) within the limitations imposed by prevalent social and religious factors, building materials, climate of particular region/ topography, complex structural problems and the limited technology available at the time**.**

UNIT-I

- Pre Industrial and Neo Classical
- Industrial period
- Modern Architecture up to Second World War.

UNIT-II

- Indo Colonial Architecture of New Delhi, Kolkata, Mumbai, Chennai, and Lucknow.
- Havellis and Palaces of Rajasthan
- Religious and institutional buildings of Sikh Architecture.

TEACHING METHODOLOGY

- For each of the period given in syllabus, stress is to be laid on making students understand the Architectural Characters/ features , building evolution and form with only one or two representative examples to highlight those features.
- Continuous evaluation shall be made of students work based on various models, assignments and sketching.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks is to be set from the entire syllabus
- Total Eight questions are to be set. Four questions from each unit
- Students shall attempt total of Five Questions with Two questions from each unit

REFERENCE BOOKS:

- Brown P, "History of Architecture Buddhist and Indian, Taraporevala and sons, Bombay, 1983.
- Grover Satish, "Islamic Architecture in India, CBS Publishers & Distributors 2010
- Fletcher Banister, "A History of Architecture, University **of** London, The Antholone Press, 1986.
- A History of Architecture:- James Fergusan, John Willey
- Fergusan James, Willey John, "History of Indian & Eastern Architecture, Dodd, Mead & company 1899
- Tagdell Christopher, "The History of Architecture in India, Phaidon Press,1994
- Curtis William Jr., "Modern Architecture Since 1900, Phaidon Press, New York: 1996**.**

B.ARCHIECTURE-VI SEM.
INTERIOR DESIGN-VI
(BACH-604)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To introduce the students to the basic principles of Interior Design in the context of built environment.

CONTENT

UNIT-I

- Objectives, Purpose, Role and Importance of Interior Design
- Principles of Interior Design and their application in the context of buildings.
- Aesthetic Order, functional Value and Psychological impact of various elements of Interior Design.
- Application of Colour, Texture, Landscaping, Artificial and Natural Lighting in the Building interiors

UNIT -II

- Elements of Interior Design , Role in interiors
- Furniture, Furnishings, Fabrics, Murals, Paintings, Sculpture, Lighting Fixtures, Floor coverings, Wall coverings and related materials.
- Study Report of an existing DESIGN PROJECT
- Space organization in interiors--presentation of the complete interior scheme of a given projects such as Library, Public Halls, Conference Room, Commercial buildings etc.

TEACHING METHODOLOGY

- Teaching in the subject shall be a combination of lectures by subject Experts, Site visits and Schematic layout Exercises

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks is to be set from the entire syllabus
- Total Eight questions are to be set. Four questions from each unit
- Students should attempt total five questions Two questions from each part besides compulsory question.

REFERENCE BOOKS:

- National Building Code
- Zenkin -Human Dimensions and Interior Design-
- Interior Design and Space Planning-Time Saver Standard-McGraw Hill
- Interior Design- Indoor and outdoor Landscaping-Archi World Company
- Jain Shashi, "Creative Interior Design of Enclosed Spaces, Management Publishers Company
- De Chaira/ Panero, "Time Saver Standard for Interior Design Space Planning, McGraw Hills

B.ARCHITECTURE – VI SEM.
BUILDING SERVICES-III
(BACH-605)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT

- To make students learn and understand basic principles governing design/provision of HVAC, Building Management System and Acoustics within the buildings.

CONTENTS

UNIT-1: AIR CONDITIONING

- Air conditioning--Role, Importance and Principles governing Air conditioning
- Refrigeration Cycle, Air cycle, Cooling Load
- Methods of Cooling and Heating-Evaporative Cooling etc
- Types of Air Conditioning Systems-Unit and Central
- Standards and location of various parts- Plant, Ductwork, Fan ,Filters, Outlets, Dampers etc
- Natural and Artificial Ventilation

UNIT-II: ACOUSTICS

- Acoustics- Introduction, Role, Importance, Concept, Basic Principles of Design,
- Sound- Basic principles governing transmission, reverberation, absorption, reflection etc.
- Acoustics-Materials- application, advantages and disadvantages
- Acoustics in Buildings- Design considerations for various buildings including Class Room, Studio, Lecture Theatre, Auditorium, OAT etc

UNIT-III: BUILDING AUTOMATION/BUILDING MANAGEMENT SYSTEM

- Building Automation-Introduction, Relevance, Scope and Importance
- Building Management System- Functions, Applicability to different services
- Building Management System- Limitations, Advantages, Disadvantages components and integration in buildings
- Intelligent Buildings- Concept, applicability and limitations

TEACHING METHODOLOGY

- Teaching in the subject shall be a combination of lectures by subject Experts, Site visits and Schematic layout exercises.

GUIDELINES FOR PAPER SETTER

- One compulsory Question of short answer type 5 question of 2 marks (10 Marks) each are to be set from the entire syllabus
- Total Eight Questions are to be set from entire syllabus including compulsory Question
- Students should attempt total five Questions with minimum one Question from each unit.

REFERENCE BOOKS:.

- BARRY R, "BUILDING SERVICES, John Wiley and Sons Ltd 1998.
- Edward - Lighting design.
- Stein, "Electrical and Mechanical Services, John Wiley & Sons, 1997**.**
- National Building Code

B.ARCHITECTURE – VI- SEM.
ESTIMATING, COSTING & SPECIFICATIONS-I
(BACH-606)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs

INTENT:

- To make students understand the factors affecting cost of buildings and methods of preparing estimates of architectural projects

.

CONTENT:

- Scope of the subject limited to preparing detailed estimates and cost of two-storeyed residential buildings in masonry and reinforced cement concrete.

TOPICS:

UNIT-I :**ESTIMATING AND COSTING**

- Estimate & Types of Estimate.
- Methods of Estimates--Approximate & detailed methods of Estimate including Plinth area method, Carpet/Floor Area method ,Cubic Content method.
- Preparing estimates of quantities of materials for various items of work e.g. earthwork, brickwork, flooring, roofing etc- units of measurements and payments.
- Analysis of rates of material and labour required for various items of work.
- Bill of Quantities-Methods of taking out the quantities of R.C.C. construction .
- Case study/practical exercise in preparing a detailed estimate of a two storeyed residential building with respect to the quantities of material and labour required as well as analysis of rates for material and labour.

UNIT-II :**SPECFICATIONS**

- Introduction , importance, Role, Functions and Types of Specifications
- Detailed Specifications for various basic building materials.
- Studio exercise related to specifications for small building project, standard P.W.D. specifications.
- Writing specifications for civil works as:-
  - Damp Proof Course
  - Brick Masonry
  - Concreting
  - Flooring
  - Plastering & Pointing
  - Timber Doors & Windows
  - Steel Doors & Windows
  - Painting and Varnishing
  - Services, Sanitary Fixtures & Electric Wiring

TEACHING METHODOLOGY

- Teaching in the subject shall be a combination of lectures by subject Experts, class room exercises, site visits.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks is to be set from the entire syllabus
  In addition,Eight questions are to be set with Four questions from each unit
- Students should attempt a total of Five questions with Two questions from each unit besides the compulsory question

REFERENCE BOOKS:

- P.W.D. Specifications
- Dutta B N, Estimating & Costing in Civil Engineering
- Agarwal A./ Upadhay A.K ,"Civil Estimating, Costing and Valuation, S. K. Kataria Sons, 01-Jan-2009
- Nanavati Roshan "Estimating, Costing and Valuation, U.B.S. Publishers, Distributers PVT.Ltd. New Delhi.

B. ARCHITECTURE -VI SEM.
ARCHITECTURAL LEGISLATION-I
(BACH-607)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. - 3 hrs

INTENT

- To make students familiar with the role and importance of Legal Framework in Designing the Built Environment and Promoting orderly growth of Human Settlements

CONTENTS

UNIT- I

- Need, Role and Importance of Legislation in the Building Industry
- Building Bye- laws-- Contents and Scope
- Study of Building Bye- laws Chandigarh- Intent and Contents
- Study of Building Bye- laws ,PUDA- Intent and Contents
- Study of Municipal Building Bye- laws - Intent and Contents
- Architectural Controls- Need, Typology, Contents and Applicability
- Introduction to various Acts- Periphery Control, Property Regulation Act, Regional and Town Planning Act, Chandigarh Capital Act, Heritage Conservation Act.

UNIT- II

- Requirements of Submission of Documents/ Drawings for approval of Building Plans in Chandigarh, PUDA, Local Bodies
- Completion/ Occupation Certificate for Buildings- Need and Procedure
- Preservation and Conservation of Heritage Buildings, Heritage Regulations
- National Building Code, - Study of Important Definitions , Types of Buildings,
- Protection of Industrial/ Multi-Storeyed Buildings against Fire etc w.r.t. National Building Code
- Disability Act

GUIDELINES FOR PAPER SETTER

- Total 8 Questions to be set from both parts.
- 5 Questions will be set from Part- I and 3 Questions from Part-II.
- Student will be required to answer 5 Questions, 3 Questions from Part- I and 2 Questions from Part – II.
- Attempt will be made to cover the entire syllabus.

REFERENCE BOOKS:-

- Building Bye Laws- Chandigarh Administration
- Building Bye Laws- PUDA
- Municipal Building Bye Laws
- Town Planning – Rangwala
- National Building Code

B.ARCHITECTURE - VI SEM.
STRUCTURE DESIGN PROJECT-V
(BACH-608)

Uni.Exam.Marks - 50 (Only External viva-voice)
Sessional Marks - 50

INTENT

- To create skill among students to apply the knowledge gained regarding structural design in an applied project and to make buildings safe against natural/ manmade disasters

CONTENTS

UNIT - I

- Detailed Structural Design & Drawings of a Public /Residential Building, (R.C.C. framestructure) with emphasis laid on practical design considerations.

UNIT-II

- Earth quake Resistant Design.
- Introduction to Codal provision, IS- 4326 and IS- 1893 for Earth quake Resistant Design of Buildings.
- Earth quake Resistant provisions for Brick Masonry& R.C.C. Buildings.

TEACHING METHODOLOGY

- Student shall prepare report consisting of Detailed Structure Design of a building considering all safety factors including fire , earthquake, cyclone, floods, etc.
- Report to be prepared in bound form with drawings attached.

EVALUATION METHODOLOGY

- Evaluation is to be done through viva voce by external examiner appointed by the university at college.

REFERENCE BOOKS

- IS -456 CODE BOOK
- I S -800 CODE BOOK
- IS- 4326 CODE BOOK
- IS- 1893 CODE BOOK
- Rani Vazi, "RCC, Khanna Publishers New Delhi. 2000
- Jain A.K. , "RCC, Lakshmi Publication (P) LTD

VII Semester Syllabus- 2012

B.ARCHITECTURE - VII SEM.
PRACTICAL TRAINING PROGRAMME
(BACH-701)

Uni.Exam.Marks - 150
Sessional Marks - 350
Duration - 6 Months

INTENT:

- To make student learn the intricacies of Architectural Profession by joining and working with practicing Architects/Architectural firms for one complete semester.

Practical Training Manual:

- The total marks shall be suitably apportioned to assess on regular basis the monthly reports, office work and work done outside office hours.
- Students are required to send/ submit monthly reports of work done by them in the office in which they are working according to a prescribed schedule. These reports shall be assessed/marked regularly by the Practical Training Coordinator(PTC).
- On the conclusion of training, the work done by the student shall be examined and evaluated through a viva- voce to be conducted jointly by the Director/ Principal/HOD, PTC and one External Examiner ,who will be appointed by the University.

Work to be done by the student:

- During training ,students are required to do two distinct types of work in order to make optimum utilization of the period of training.

a) Work to be done during office hours:
The work to be done during office hours will include:

- Drafting, Tracing, Sketch designs, Presentation drawing, Perspectives, Models, documentation etc.
- Working Drawing and details

b) Work to be done during extra - office hours:
The work to be done during extra - office hours will include:

- Preparing a study report on Building design, Analysis incorporating Site visits, recording Observations etc.

DISTRIBUTION OF MARKS

- **University (External) Marks - 150**
- **(a) Univ. Viva – Voce - 100**
  (to be conducted by the external expert appointed by University)
  c) **Marks awarded by the employer -50**
  (to be sent in original to the University)
- **Internal Marks - 350**
  (to be sent by PTC in the format given below)

Roll No.	Joining Report Marks	Monthly Report Marks	Building Study Report Marks	Seminar Presentation Marks
	20	80	125	125

NOTE: Based on the above guidelines a detailed program shall be drawn each year by the PTC, which shall be approved by the Director/Principal before it is implemented. The intention will be to update the program on regular basis, incorporating new details, with focus on making continuous qualitative improvement of the practical training.

VIII Semester Syllabus- 2012

B.ARCHITECTURE - VIII SEM.
ARCHITECTURAL DESIGN-VII
(BACH-801)

Uni.Exam.Marks - 125 (No exam, only viva-voce by external jury)
Sessional Marks - 125

INTENT:

- To make students understand the principles and implications of advance and complex design problems with focus on planning, landscaping, energy conservation and services considering zoning regulations.

CONTENTS

The design programme includes:

- Planning and Designing of large Complexes related to **Health care and Academic Institutions**-Hospitals cum Medical Colleges etc.
- Planning and Designing of **Traffic Nodes-**Bus Terminal, Railway Station, Airport.
- Light **Industrial Buildings** involving manufacturing ,display etc

NOTE:

All buildings should have accessibility to the physically challenged persons.

TEACHING METHODOLOGY

- Minimum Two projects should be done by the student. The Projects selected should be based on realistic contexts.
- The design submitted shall include complete project drawings, perspective, models and details
- Teaching focus will be to promote design concept based on Site, Landscaping, Climate, Energy, Services ,Safety and compliance with Building Regulations etc

EVALUATION METHODOLOGY

- External marks shall be awarded through viva- voce conducted by the External Jury appointed by the University of the work done by the student during the semester .

REFERENCE BOOKS :

- Ching, Frank (Francis D.K.), "Architecture : Form,Space & Order", Publisher John Wiley, Hoboken 2007.
- Parmar V.S, "Design Fundamentals, Publisher-Somaiya Publisher Pvt. Ltd, Mumbai 1997.
- Scott Van Dyke, "Form, Line to Design, Publisher-Van Nostrand Reinhold, 1990.
- Scott R, "Design Fundamentals, Publisher-Robart E. Krieger Publishing Company
- E&OE- Architects Hand Book and Planning
- Donald Watson , Michael J. Crosbie, "Time Saver Standard, 8th edition

B.ARCHITECTURE - VIII SEM.
BUILDING CONSTRUCTION& MATERIALS - VII
(BACH-802)

Uni.Exam.Marks - 75
Sessional Marks - 75
Duration of Exam. - 04 hrs.

INTENT

- To make students aware and familiar with special constructional details involving finishing and furnishing, extension and expansion joints and basements with details.

TOPICS

UNIT-I

- Study , design and details of various types of counters and Interior finishes, lighting for Banks, Hotels, Offices, Shops, Railway station and other public places.

UNIT-II

- Materials and Construction details of wall Panelling, False Ceiling including Thermal and Acoustics treatments.

UNIT-III

- Extension and Expansion joints in R.C.C.
- Construction of Basement including design, detailing, treatment for water/damp proofing etc.
- Study of Prefabricated structures.
- Advantages and disadvantages of on-site and off- site pre-fabrication.
- Pre-fabricated components, involving simple details in prefabrication.

TEACHING METHODOLOGY –

Teaching methodology shall be a combination of:

- Field visits to study the interiors and details of the buildings.
- Preparing Construction plates.
- Market study of the products available under different trade names with details of their manufacture, specification and performance.
- Site Visits and details of prefabricated structures

GUIDELINES FOR PAPER SETTER

- Minimum Six questions are to be set from the entire syllabus with Two Questions from each unit.. Student would be required to attempt three questions with minimum one from each unit.
- Question paper is to be set covering whole of the syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

a) Building Materials

- Rangwala S.C, "Engineering Materials, Charotar Publishing House, India
- TTTI , "Engineering Materials,. Publisher-Tata McGraw-Hill Education, 2001
- Deshpande -Engineering Materials
- National Building Code 2005

b) Building Construction

- MICHELL, "ELEMENTARY BUILDING CONSTRUCTION, Published by B T Batsford Ltd, London , 1961
- PUNMIA B.C. , "BUILDING CONSTRUCTION,
- MCKAY W.B. , "BUILDING CONSTRUCTION (VOL 1-4) , Longmans, U.K 1981
- BARRY R. , "CONSTRUCTION OF BUILDINGS(VOL. 1-4) Oxford : Blackwell Scientific, 1999
- CHUDLEY R. , "CONSTRUCTION TECHNOLOGY (VOL. 1-4) Longmans, UK 1981
- CHING FRANCIS D.K. , "BUIL. CONSTRUCTION ILLUSTRATED, John Wiley, New York 2003

B.ARCHITECTURE - VIII SEM.
URBAN DESIGN-I
(BACH-803)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To create awareness and promote understanding of the nature, role and importance of Urban Design in the making of quality Built Environment and Human Settlements

CONTENTS

UNIT- I

- Introduction, Role, Scope and Importance of **Urban Design**
- Distinction between **Urban Design, Architecture and Town Planning**
- **Elements of Urban Design-** Pattern, Grains, Texture, Density etc, their role and importance.
- **Determinants of Urban Form –** Landform, Climate, Symbolism, Activity Pattern, Socio-cultural Factors, Materials, Techniques etc. and their role and importance.
- **Imagability-** Elements their role and importance including Paths, Nodes, Landmarks ,Edges, Districts etc
- **Designing Cities-** Role and importance of Communication, Utilities, Landscape Features, Transport, Visual Expression, Size, Contrast, Urban Character etc.
- **Shapes of the Cities-** Comparative advantages and Disadvantages

UNIT- II

- **Urban Spaces**-Typology including Street, Square, Precinct, Piazza, Mall etc
- **Urban Spaces-** Elements, identification, characteristics and role in shaping the spaces
- Changing Role ,Importance and Pattern of **Urban Spaces** in historical perspective- **Greek, Romans, Medieval and Contemporary cities.**
- **Design Principles** involving Scale and Enclosures
- **Development Controls-** Role and Importance in Urban Design.
- **Urban Design study of selected Capital Cities-** Chandigarh, Delhi and Jaipur
- **Legal and Institutional framework** for Urban Design including Delhi Urban Art Commission- Objectives, Constitution, Role, Importance, Impact etc

TEACHING METHODOLOGY

- Emphasis shall be laid on understanding of evolution of Cities and Buildings . Continuous evaluation shall be made of students work based on various assignments and sketching.
- Teaching in the subject will be a combination of Expert lectures, specific case studies and field visits of historical and contemporary cities.
- Students would be required to do, in groups, a case study of a city to make them understand the various aspects of urban design . The study will be illustrated with maps, visuals, photographs and sketches.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively)
- In addition, Four questions are to be set from each UNIT.
- Students are required to attempt five questions including compulsory question with two questions from each UNIT.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Spreiregan Paul D**, "Urban Design**: The Architecture of Towns and Cities".
- Gallion Arthur B**, "The Urban Pattern:** City Planning and Design".
- Gupta S.P. "**The Chandigarh**: An Overview"
- Agarwala S.C. **"Architecture and Town Planning"**
- **Institute of Town Planner (India)** – Readers Volume

B.ARCHITECTURE - VIII SEM.
HOUSING-I
(BACH-804)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To make students understand the role, importance and issues related to housing.

CONTENTS

UNIT I

- Role and importance of Housing
- Status of Housing in India
- Housing need, demand and concept of affordability.
- Housing typologies including plotted and flatted development
- Housing surveys including methods of conducting surveys
- Housing- problems and solutions in India
- Housing for the Poor
- Slums -Origin, Growth, Problems and Solutions
- Role of Public and Private Sectors in Housing.

UNIT II

- National Housing and Habitat Policy 2007
- Institutional framework for Housing Finance
- Institutional framework for Housing Delivery
- Factors affecting Cost of Housing
- Basic Housing Norms and Standards for EWS, LIG and MIG

GUIDELINES FOR PAPER SETTER

- Total 8 Questions to be set from both parts.
- Five Questions will be set from Part- I and Three Questions from Part-II.
- Student will be required to answer Five Questions, Three Questions from Part- I and Two Questions from Part – II.
- Attempt will be made to cover the entire syllabus.

REFERENCE BOOKS

- National Housing and Habitat Policy 2007
- Rangwala S C, “Town Planning”
- National Building Code, 2005
- Lal A K “Hand book of Low Cost of Housing” , New Age Publishers
- Readers Volume on Housing – Institute of Town Planners, India
- Report of Govt. of India on Housing Shortage
- Journal of IIA, April 2013

B.ARCHITECTURE - VIII SEM.
HIGH RISE BUILDINGS-I
(BACH-805)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. - 3 hrs.

INTENT

- To make students aware and understand the context of planning, designing and construction of High Rise buildings and their role and importance in shaping the Human Settlements and Urban Form in the Modern Context.

CONTENTS

UNIT I

- **High Rise Buildings**- Introduction, Historical perspective, Origin, Definition, Role, Importance , Limitations, Advantages and Disadvantages
- **Planning /Designing** of High Rise Building
- **Construction** of High Rise Buildings
- **Building Technologies** used in the Construction
- **Building Materials** used in the Construction

UNIT II

- Study of **Building Services** in the High Rise Buildings
- **Fire Safety and Structural safety** of High Rise Buildings
- Study of **Legal Framework** governing the High Rise Buildings
- Study of **National Building Code**, 2005
- Study of famous **High Rise** Buildings-Burj Khalifa, Sears Towers, Empire State Building, World Trade Centre, Imperial Towers and Orchid Woods Mumbai .

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of invited lectures , visit to Multi-Storyed/ High Rise Buildings and library studies/power point presentations of High Rise Buildings mentioned above.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing Five questions of 2 marks each (10 Marks) is to be set from the entire syllabus (4 Marks and 6 marks)
- In addition , Four questions are to be set from Each Unit .
- Students are required to attempt Five questions including compulsory question with minimum One question from each UNIT.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topic

B.ARCHITECTURE - VIII SEM.
ARCHITERCTURAL CONSERVATION-I
(BACH-806-E/L)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To promote understanding and importance of the Historical buildings and their preservation and conservation.

CONTENTS

UNIT-1

- Heritage- Introduction, Definition, Role, Importance, Scope and Limitations
- Study of basic historical styles in Indian Architecture.
- Study of ornamentation and detailing in historical buildings in various styles.
- Study of construction methods and structural analysis of various historical building styles e.g. Arches Domes, Vaults and Shikharas etc.

UNIT-II

- Study of finishes in historical buildings.
- Effects of weathering/ pollution on historical buildings.
- Study of landscaping style/ Plantation around historical buildings.
- Knowledge of plantation/ water features in Mughal Garden and Hindu Temples.

UNIT-III

- Methods of studying and documenting historical monuments in the context of guidelines issued by UNESCO, INTACH.
- Methods of saving monuments from vandalism.
- Study of existing Legal framework to protect Heritage and its limitations
- Institutional framework to protect Heritage

TEACHING METHODOLOGY

- Emphasis shall be laid on understanding of Architectural Conservation. Continuous evaluation shall be made of students work based on various assignments and sketching.
- Teaching in the subject will be a combination of Expert lectures, specific case studies and field visits of historical and contemporary buildings/complexes.
- Students would be required to do, in groups, a case study of a historical building to make them understand the various aspects of Architectural Conservation. The study will be illustrated with maps, visuals, photographs and sketches.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus.
- In addition, the examiner is to set Seven questions with minimum Two from each unit. Student would be required to attempt Five questions with minimum One from each unit including compulsory question

- Questions paper is to be set covering whole of the syllabus by making parts and mixing the topics.

REFERENCE BOOKS :

- Oliver Paul, “Encyclopaedia of Vernacular Architecture of world”
- Thakkar Jay, “Matra: Ways of measuring Built form of Himachal Pradesh”, CEPT University.

B.ARCHITECTURE - VIII SEM.
SUSTAINABLE ARCHITECTURE-I
(BACH-807-E/L)

Uni. Exam. Marks - 60
Sessional Marks - 40
Duration of Exam. - 03 hrs.

INTENT

- To educate and make students aware about sustainability issues, need and importance of promoting sustainable Architecture.

UNIT-I

- **Sustainable Development**- Introduction, definitions, objectives and scope
- **Man and Environment**- Introduction, issues and options
- **Human Settlements**- Planning, Growth, Development, Problems
- **Global warming –** Introduction, Causes, Effects and Remedies, Carbon Credits**.**
- Architect-**Role in Sustainable Development.**
- Energy - **Role, Importance in buildings**
- Sources of Energy- **Non- renewable and renewable – Role and Importance**
- **Sustainable Materials** – Production and use
- **Quality of indoor/outdoor environment**

UNIT-II

- **Sustainable Design** – Concept, Objectives, Principles, Approach to Sustainable design
- **Built Environment**- Sustainable Construction, Ecological Buildings, Green Building
- **Building Rating System**
- **ECBC Code**
- **Sustainability Assessment** - LEED, Life Cycle Assessment, GRIHA
- **Climate responsive and Solar Passive Strategies in Indian Climates**
- **Recycling/Reuse**
- **India's approach to sustainable Development.**

TEACHING METHODOLOGY

- Emphasis shall be laid on understanding of Sustainable Development.
- Teaching in the subject will be a combination of Expert lectures, specific case studies and field visits to sustainable buildings/complexes.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus .
- In addition, the examiner is to set Seven questions with minimum Three Questions from each unit. Student would be required to attempt Five questions with minimum Two from each unit including compulsory question

REFERENCE BOOKS:

- Koensberger, Ingersoll, Mayhew,Szokolay , "Manual of Tropical Housing & Building, March 1974
- C.P. Kukreja,"Tropical Architecture,Tata McGraw-Hill Publishing Company, 1978.
- Martin Evans, "Housing, Climate & Comfort, Architectural Press, 1980.
- Lippsmeier, Georg, "Building in the Tropics, Callwey Verlag, Munchen, 1980
- Gideon S. Golany, "Design for Arid Regions, Publication Van Nostrand Reinhold, New York 1983.
- B.Givoni, "Man, Climate & Architecture, Von Nostrand Reinhold Company New York - 1981
- Reserch notes on climate:- C.B.R.I, Roorkee
- Krishan A,Baker, "Climate Responsive Architecture, McGraw-Hill Education (Asia) Co. and China Architecture & Building Press. 2004/2005
- Energy Efficient Buildings in India:- TERI

B.ARCHITECTURE - VIII SEM.
BUILDING MAINTENANCE - I
(BACH-808-E/L)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To make student understand the Role and importance of the building maintenance in built environment.

TOPICS

UNIT-I

- Maintenance- Introduction, Need, Scope, Importance& Role of an Architect.
- Maintenance-Economic and Social significance
- Maintenance - Problems and issues related to materials, design and detailing.
- Climate- Effect on the life cycle of buildings.
- Deterioration and Decay of buildings- Typology, Reasons, Prevention
- Deterioration and Decay- Causes, Effect, Remedies

UNIT-II

- Defects in Buildings-Efflorescence, Dampness, Settlement, Cracks, Corrosion etc - causes, effects, preventive and remedy
- Retrofitting of Buildings for Structural safety
- Building service and maintenance -- water supply, sewerage, and Sanitation system.
- Case study of any existing building

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of Expert lectures, Specific case studies and field visits to buildings in deteriorating conditions.
- Lectures from representatives of industry and visits to the industrial units involved in producing materials to make buildings safe will be made integral part of teaching

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus.
- In addition, the examiner is to set Seven questions with minimum Three from each unit. Student would be required to attempt Five questions with minimum One from each unit including compulsory question
- Questions paper is to be set covering whole of the syllabus by making parts and mixing the topics.

B.ARCHITECTURE-IX SEMESTER

B.ARCHITECTURE -IX SEM.
ARCHITECTURAL DESIGN-VIII
(BACH-901)

Uni.Exam.Marks - 125 (No exam, only viva-voce by external jury)
Sessional Marks - 125

INTENT

- To make students aware and understand the complexity and methodology to handle large projects through group design, involving urban environment and prevailing building regulations.

TOPICS

The design problems will include Public Buildings with diverse activities involving:

- **Higher Order of Office/Commercial complex,** -City Centre, District Centre, Large Exhibition Complexes, Convention Centre Multiplexes
- **Campus designing** - University, Professional Institutes, Integrated Campus etc.
- **Capital Complex**-Secretariat, High Court, Assembly

NOTE

- All buildings should have accessibility to the physically challenged persons

TEACHING METHODOLOGY

- Minimum Two projects should be done by the student. The Projects selected should be based on realistic contexts.
- The design submitted shall include complete project drawings, perspective, models and details
- Teaching focus will be to promote design concept based on Site, Urban design, Landscaping, Traffic and Transportation, Climate, Energy, Services ,Safety and compliance with Building Regulations etc

EVALUATION METHODOLOGY

- External marks shall be awarded through viva- voce conducted by the External Jury appointed by the University of the work done by the student during the semester.

REFERENCES BOOKS:

- Ching, Frank (Francis D.K.), "Architecture : Form,Space & Order", Publisher John Wiley, Hoboken 2007.
- Parmar V.S, "Design Fundamentals, Publisher-Somaiya Publisher Pvt. Ltd, Mumbai 1997.
- Scott Van Dyke, "Form, Line to Design, Publisher-Van Nostrand Reinhold, 1990.
- Scott R, "Design Fundamentals, Publisher-Robart E. Krieger Publishing Company
- E&OE- Architects Hand Book and Planning
- Donald Watson , Michael J. Crosbie, "Time Saver Standard, 8th edition

B.ARCHITECTURE -IX SEM.
BUILDING CONSTRUCTION & MATERIALS-VIII
(BACH-902)

Uni.Exam.Marks - 75
Sessional Marks - 75
Duration of Exam. - 4 hrs.

INTENT

- To make students aware and learn about advance construction techniques and preparing project drawings.

CONTENTS:

UNIT-I

- Complete Set of Working Drawing of a major design project of 8th semester including Site plan , Foundation plans, Elevations and Sections .
- Commercial Kitchen- Study, designing and working drawing
- Introduction to Pre- stressing and Post- Tensioning

UNIT-II

- Materials used in building façade with construction details.
- Modular Construction- Objectives, basic principles, planning and structural modules.
- Mass production, Transportation, Storage and handling of construction materials.
- Curtain Walls- Role, functions, materials, principles and details
- Elevators, Escalators, Travellators, Refuse Chutes- The study and details of Construction.

TEACHING METHODOLOGY

- Teaching in the subject shall be a combination of field/ site visits, visit to industrial units involved in mass production and preparing construction plates on above topics.

GUIDELINES FOR PAPER SETTER

- Total 6 Questions to be set from both parts.
- Three Questions will be set from each unit
- Student will be required to answer Three questions with minimum One question from each part
- Attempt will be made to cover the entire syllabus.

REFERENCE BOOKS:

a) Building Materials

- Rangwala S.C, "Engineering Materials, Charotar Publishing House, India
- TTTI , "Engineering Materials,. Publisher-Tata McGraw-Hill Education, 2001
- Deshpande -Engineering Materials
- National Building Code 2005

b) Building Construction

- MICHELL, "ELEMENTARY BUILDING CONSTRUCTION, Published by B T Batsford Ltd, London , 1961
- PUNMIA B.C. , "BUILDING CONSTRUCTION,
- MCKAY W.B. , "BUILDING CONSTRUCTION (VOL 1-4) , Longmans, U.K 1981
- BARRY R. , "CONSTRUCTION OF BUILDINGS(VOL. 1-4) Oxford : Blackwell Scientific, 1999
- CHUDLEY R. , "CONSTRUCTION TECHNOLOGY (VOL. 1-4) Longmans, UK 1981
- CHING FRANCIS D.K. , "BUIL. CONSTRUCTION ILLUSTRATED, John Wiley, New York 2003
- Prefabrications Manuals of Kirbi and other Manufactures

B.ARCHITECTURE -IX SEM.
TOWN PLANNING-I
(BACH-903)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. - 3 hrs

INTENT

- To make students understand the role and importance of Town Planning in the evolution of Human Settlements and Urban Forms in the Historical and Modern Context.

CONTENTS

UNIT-I

- Introduction, Role, Importance and Scope of **Town Planning**
- Planning Principals of Human Settlement in **Nile Valley, Greek and Roman Periods.**
- **Town Planning in India**- Vedic period, Indus Valley, Islamic, Medieval and Colonial Period.
- **Classification of Human Settlements** based on Road Pattern, Form, Use, Scale/ Population etc.

UNIT- II

- **Master Plan –** Objectives, Role, Importance and Methodology.
- **Regional Plan -** Objectives, Role, Importance and Methodology
- **Planning Concepts**- Garden City, Linear City, Industrial City and Sustainable City and Neighborhood
- **Existing Towns and Cities in India**- Problems, Remedies etc.
- **Urbanization –** Causes, Pattern and Effect in India.
- **Study of New Towns in India –** Chandigarh, New Delhi & Gandhi Nagar.
- **Town Planning in Punjab**
- Role of **Development Authorities** in Urban Development.

GUIDELINES FOR PAPER SETTER

- Total 9 Questions to be set from both parts.
- Four Questions will be set from Unit- I and Five Questions from Unit-II
- Student will be required to answer Five Questions, Two Questions from Unit- I and Three Questions from Unit–II.
- Attempt will be made to cover the Entire Syllabus.

REFERENCE BOOKS:

- **UDPFI Guidelines –** Ministry of Urban Development
- Rangwala S C, "Town Planning"
- Spreiregan Paul D**, "Urban Design**: The Architecture of Towns and Cities".
- Gallion Arthur B**, "The Urban Pattern:** City Planning and Design".
- Gupta S.P. "**The Chandigarh**: An Overview"
- Agarwala S.C. **"Architecture and Town Planning"**
- **Institute of Town Planner (India)** – Readers Volum
- **Report of National Commission on Urbanization –** Govt. of India.
- **Census of India –** 2001 and 2011

B.ARCHITECTURE -IX SEM.
BUILDING ECONOMICS-I
(BACH-904)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To create awareness, impart knowledge and promote understanding of the role and importance of Economy and Cost –effectiveness in the buildings to promote sustainability .

CONTENTS

UNIT I

- **Building Economics**-Introduction, Definition, Role, Scope, Importance and Principles of **building economics.**
- **Cost of Building**- Components, Impact of various components ,Types of costs including Construction Cost, Maintenance cost, Operational Cost etc
- **Cost Management**- Aims, Objectives, Need , Principles, Procedure, Cost Analysis.
- Analysis of Comparative Economics of **Low Rise and High Rise Buildings**

UNIT II

- **Technology** – Role, Importance, Use, Up-gradation of local Technologies to make buildings cost- effective.
- **Materials**- Role, Importance, Innovative building materials ,up-gradation of local materials, Comparative analysis of available building materials
- **Construction Techniques**- Study of Innovative Building Techniques for cost reduction with comparative merits and Demerits
- Introduction, Role and Importance of **Modular construction, Pre- Engineered Buildings, Mass Production, Standardization** etc in cost effectiveness
- **Cost Reduction** -through Planning, Designing and Specification of buildings involving Space Optimization and Structural Innovations
- **Space Norms**- Role and importance of Space Norms for Cost –reduction, Principles for defining Space Norms, Norms defined in NBC.

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of Expert lectures, Specific case studies and field visits to Low Cost buildings
- Lectures from representatives of industry and visits to the industrial units involved in producing building materials will be made integral part of teaching
- Students would also be encouraged to attend building material exhibitions etc.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively)
- In addition, Four questions are to be set from each UNIT.
- Students are required to attempt five questions including compulsory question with two questions from each UNIT.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Sustainable Buildings- Design Manual Vol- I&II by TERI
- National Building Code, 2005
- Lal A K "Hand book of Low Cost of Housing" , New Age Publishers
- Readers Volume on Housing – Institute of Town Planners, India
- Report of Govt. of India on Housing Shortage
- Journal of IIA, April 2013.

B.ARCHITECTURE -IX SEM.
HILL ARCHITECTURE-1 (E/L)
(BACH-905)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To make students aware and understand the specific requirements of art and science of designing buildings in hill areas based on climate, topography, local materials, social factors etc.

CONTENTS

UNIT-I

- **Hill Architecture-** Introduction, historical perspective, specific attributes/unique features etc.
- **Traditional Hill Architecture of Medieval Europe**- overview , specific features, building materials, building technologies
- **Hill Settlements-**Approach, overview ,specific features of planning and designing in different climatic regions of the world
- **Disasters in Hill Areas:** - Issues and Options.

UNIT- II

- **Hill Architecture in India**- Growth, Development, Character and unique features
- **Building Typologies**- Study of various types of traditional buildings in different Hill Regions of India with their unique features
- Factors effecting **design of buildings** in Hill Areas- Topography, Climate, Vegetation, Materials, Technology, Sustainability Social factors etc- their role and importance
- **Building Technologies**- Study of different technologies for construction of Foundations, Walls. Floors, Roof etc in Hill Regions of India
- Study of Traditional **Hill Settlements** in India with their planning features
- **Hill Architecture** in Post- independence Period- Approach, Pattern, Typical features, Materials, Technologies etc and their impact on ecology, environment and Sustainability of Hill Areas

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of Expert lectures from Architects practicing/ having experience in the Hill areas, visit to any nearby hill settlement and library studies of different hill regions of India and Europe.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively)

- In addition, Three questions are to be set from UNIT 1 and Four questions are to be set from UNIT II.
- Students are required to attempt Five questions including compulsory question with minimum One question from each UNIT.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Oliver Paul, “Encyclopaedia of Vernacular Architecture of world”
- Thakkar Jay, “Matra: Ways of measuring Built form of Himachal Pradesh”, CEPT University.

B.ARCHITECTURE -IX SEM.
VERNACULAR ARCHITECTURE -I
(BACH-906 E/L)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To make students understand and appreciate the elements , techniques and factors which go into the making of vernacular architecture as distinct from other styles of architecture

CONTENT

UNIT-I

- **Vernacular Architecture**- Meaning, Role, Importance & basic Theories.
- **Determinants of Vernacular Architecture**- Role and importance of social, cultural, political, economic , climatic, technological factors

UNIT-II

- **Vernacular Architecture-Role and importance of** Materials & Technology
- Vernacular Architecture and Disaster Management.

UNIT-III

- **Illustrated Case studies** - Vernacular settlements/Building typology from various regions in India and abroad.
- Study of **Vernacular Architecture of various Regions of Punjab** with their distinct features/ elements .

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of Expert lectures, visits to historic buildings representing peculiar culture, technology and architectural elements, visits to museums and archives with library studies of different regions of Punjab and India.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus
- In addition,three questions are to be set from UNIT 1&III and Two questions are to be set from UNIT II.
- Students are required to attempt Five questions including compulsory question with minimum One question from each UNIT.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Oliver Paul, "Encyclopaedia of Vernacular Architecture of world"
- Thakkar Jay, "Matra: Ways of measuring Built form of Himachal Pradesh", CEPT University.

B.ARCHITECTURE -IX SEM.
TRAFFIC AND TRANSPORTATION-I
(BACH-907-E/L)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To create awareness and impart knowledge about Traffic and Transportation and related issues.

CONTENTS

UNIT-I

- **Traffic and Transportation**- Introduction, Need, Role and Importance
- **Transport Systems**-Typologies, basic character and comparative advantages and disadvantages.
- Role of **Bicycle** as a preferred mode of transport including planning for Bi-cycles
- **Inter and Intra city Traffic**- Nature, characteristics, problems and solutions
- **Accidents**- Causes, effects, and remedies to promote Road Safety
- **Problems and Issues** related to Traffic and Transportation in the Indian cities and Core areas with options to meet these challenges.

UNIT-II

- **Traffic Control Devices**- Typology, Application and comparative Merits and Demerits
- **Signage**- Introduction, Objectives, Function and classification
- Design of **Road Intersections**, Rotaries, Over bridges, Underpasses, Flyovers with reference to a well designed city like Chandigarh.
- **Roads**- Hierarchy, Classification, Capacity, Road Cross-sections
- **Mass Transportation/ Public Transport**-Concept, Characteristic, Mode, Advantages and disadvantages
- **Surveys**-Objectives, Need, Importance ,Types and Methodologies for conducting Traffic Surveys .
- **Parking**- Introduction, Types, Requirement, Problems and Solutions.
- **National Transport Policy**
- **Traffic Management and Land use Planning**

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of Expert lectures and visits to areas of high traffic including City centre, Commercial areas, Wholesale Markets. Core Areas and Major Road Network passing through the city. The visit will also include traffic nodes like Bus Terminus, Railway Station, and Truck Terminus.
- Students should be made to do a small traffic survey in a congested area.

Guidelines for Paper Setter

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus (4 Marks and 6 marks)

- In addition , three questions are to be set from UNIT 1. Four questions are to be set from Unit III
- Students are required to attempt Five questions including compulsory question with minimum One question from each UNIT.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Kadiyali, "Traffic and Transportation"
- National Transport Policy
- Agarwala S C, "Architecture and Town Planning"
- Institute of Town Planner (India) – Readers Volume
- UDPFI Guidelines – Ministry of Urban Development
- National Building Code,2005

B.ARCHITECTURE -IX SEM.
LANDSCAPE ARCHITECTURE-II
(BACH-908-E/L)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To make students aware of the role and importance of landscape design in creating sustainable built environment and in promoting quality of ecology and environment in and around buildings.

CONTENTS

UNIT- I

- **Landscape Design-** Introduction, process, nature, scope, relationship between Man and Nature, Role and importance of Ecology
- **Relationship between Architecture and Landscaping**
- **Landscape Design-**Basic Elements, Role and Importance, Problems and Potentials-- Earth, Rock, Water, Plants, Grass, Gravel, Vegetation etc
- **Recreation Spaces-**Typology, Planning and Designing
- **Landscape Gardens-** Historical perspective from earlier period to contemporary designs
- **Arboriculture, Garden Furniture, Signage**

UNIT- II

- Site Analysis- Role, Importance, Contour/ Mapping in Landscape Design
- Surveys- Purpose, Need ,Objectives, Role , Importance in Landscape Design
- Process of Landscape Design including role of services (Electrical and public health)
- Formal and Informal Landscape
- Study of eminent contemporary landscape design works/ projects

TEACHING METHODOLOGY

- Teaching shall be imparted through a combination of lectures by subject experts, visits to the historical gardens developed over the period, landscape projects of repute, study of native and other trees etc
- Continuous evaluation shall be made of students work based on assignments and sketching.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type of 10 Marks are to be set from the entire syllabus
- Total Eight questions are to be set. Four questions from each unit
- Students are required to attempt a total of Five questions.

REFERENCE BOOKS:

- Reid Grant W, "Landscape Graphics"
- Littlewood Michael, "Landscape Detailing"
- Harris and Dines, "Time Saver Standard for Landscape Architecture"- Plants of India
- Tony Russel & Catherine Cutler, "Trees- An Illustrated Identifier and Encyclopedia"

- Simonds, “Landscape Architecture”
- Laurie Michael, “Introduction to Landscape Architecture”
- Watts Rajnish/Dhillon Harjit/Chhattar Singh, “Trees of Chandigarh”
- Krishan Pradip, “Trees of Delhi”
- Bose D K/ Sharma S P/ Chaudhaury B, “Tropical garden plants in colors”
- Randhawa M S, “Flowering Trees and Shrubs of India”
- Randhawa M S, “Beautifying India”

X Semester Syllabus- 2012

B.ARCHITECTURE – X SEM.
ARCHITECTURAL DESIGN -IX (THESIS PROJECT)
(BACH-1001)

Uni.Exam.Marks - 250 (No exam, only viva-voce by external jury)
Sessional Marks - 300

INTENT

- To make student synthesis and use knowledge of various disciplines gained during entire study in an architectural project of his choice.

CONTENT

A. Thesis project will comprise of the following:

- **An Illustrated Report**- which will include the validity and scope of the chosen project, methodology, prototype studies, site analysis, client's and architect's briefs, delineation of programme and design criteria.
- **A fully worked-out Design Proposal**- including consideration of site planning structures, services, and any other aspect/specific to the project.

B. Stages of Work:

The entire process of Thesis Design shall be divided into four distinct stages involving:

1. **Approval of Project:**

    - The intent of the thesis project as well as the criteria for selection of the project will be introduced to the students around the 6th week of the previous semester, i.e.9th Semester B.Arch.
    - Before the closing of the 9th Semester, students will be required to submit brief write-up on three projects out of which one will be approved.

2. **Rough Report:**

    - Rough Report shall comprise of all analytical aspects of the project including Synopsis, Library studies, Prototype studies, Site analysis, Delineation of Building Program, etc.

3. **Evolution of Design** :

    - Shall be worked out in minimum of four stages.

4. **Draft of Final Report**:
    - Shall include Evolution of Design, Final Report, Drawings and Model, to be evaluated through a University Examination- Through a visual presentation/ viva-voce.

NOTE

- Students will be required to submit two identical copies of the final report along with a soft copy, on a standard format prescribed in the thesis programme issued by the Thesis Coordinator.
- The report must also included A-3 size copies of all final drawings and at least two photographs of the final model/models.
- The original copy of the report, the final drawings and models will be returned to the student after the declaration of the result. The photocopy along with the soft copy of the report and drawings will be retained for reference in the college library.

C. SCHEDULE OF SUBMISSIONS/EXAMINATION

(Note: Commencement of the semester will be considered as Zero week.)

Stages of work	Time allocated	Max. Marks
1. **Sessional Work**		
(**a) Rough report**	**6 weeks**	**100**
(i) Synopsis	1 week	20
(ii) Preliminary Library studies	2 weeks	20
(iii) Site analysis, Prototypes/ Additional Library studies	2 weeks	30
(iv) Programme Formulation	1 week	30
(b) Evolution of Design	**5 weeks**	**150**
(i) Design Criteria and Concept		25
(ii) Design Proposal Stage-1		25
(iii) Design Proposal Stage-2		50
(iv) Pre-final Design		50
(c) Draft Final Report with drawings. (Incorporating improvements suggested in Rough Report, Design Criteria and explanatory Sketches of Evolution of Design)	**5 week**	**50**
2. External Examination		**250**

SUBMISSION REQUIREMENTS

- Students are required to submit the Final Report, all final drawings and models in the standard format prescribed in the Thesis programme.
- The students would also be required to submit an abstract of the thesis project.
- Submission will be made one day before the date of examination.
- All buildings should have accessibility to the physically challenged persons**.**

EVALUATION METHODOLOGY:

- The thesis studio will be conducted under the overall coordination of the Thesis Coordinator. In addition, two members of the Visiting Faculty would also be associated throughout the duration of the studio. Each student will be assigned a Thesis Guide (from amongst the faculty) who will supervise the progress of the student's work on a regular basis.

- Approval of the thesis project/topic will be done by the Principal/HOD, the Thesis Coordinator and the concerned Thesis Guide.
- All stages of Sessional work will be evaluated jointly by the Principal/HOD and the entire studio team (Thesis Coordinator, Visiting Faculty and the concerned Thesis Guide).
- Marks awarded at each stage will be based on the average of those awarded by all jury members.
- Jury for the External Examination will comprise the Principal, Thesis Coordinator and two External Examiners appointed by the P.T.U.

B.ARCHITECTURE – X SEM.
CONSTRUCTION MANAGEMENT -I
(BACH-1002)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To make student understand and appreciate the role and importance of management in building construction.

CONTENT

UNIT-I

- **Project Management**- Concept, Background, Purpose, Aim, Objectives, Scope and Significance
- **Traditional Management Systems**- Advantages and limitations
- **Role of Architect** in Construction/Project Management
- **Resources** of Construction Industry.
- **Construction** stages, Construction team, Equipment Management

UNIT-II

- **Project Management Techniques**- Network ,CPM, PERT,
- **CPM Analysis**- Critical Path, Float Computation Result Sheet etc
- **PERT**- Introduction, Theory and Network analysis
- **Cost Time** analysis in Network Planning.
- **Financing of Project**, Depreciation and Break even Cost analysis
- **Cost Control**- Budget, Accounting System, Problems

UNIT-III

- **Quality and Safety**- Objectives, Issues, Organising for Quality and Safety
- **Stages of Inspection** and Quality control
- **Planning of Temporary Services** at the site.
- **Security of Materials** and Manpower at building site.
- **Computer Application** in Construction Management

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of Expert lectures and visits to Construction /Project Sites and discussions with Project Managers
- Students would be required to do a case study of a ongoing construction project

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus
- In addition, seven more questions are to be set from other units with minimum two questions from each unit.
- Students are required to attempt five questions including compulsory question with minimum one question from each UNIT.

- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Peurify R.L, "Construction Planning, Equipment and Methods", International Book Company
- Srinath L S, "PERT &CPM Principles and Applications" , EWP Limited New Delhi
- Bhatnagar S K, "Network Analysis Techniques", Willey Eastern Limited

B.ARCHITECTURE – X SEM.
PROFESSIONAL PRACTICE
(BACH-1003)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To make students understand and familiar with different aspects of Architectural Practice and Professional Responsibilities.

CONTENT

UNIT- I

- **Architects –** Role, Functions, Social Obligations, Profession Activities, Responsibilities etc.
- **Indian Architects Act 1972 –** Scope, Objective, Role & Importance in managing the profession and professionals .
- **Council of Architecture –** Constitution, Role and Function, Registration of Architects etc.
- **Indian Institute of Architects –** History, Objectives, Role and Function in promoting Architectural profession and education.

UNIT- II

- **Architectural Practice –** Type of Practices, Setting office, Office Organization, Management, Income Tax, Service Tax etc.
- **Architectural Competition –** Importance, Type, Procedure, Guidelines framed by Council of Architectural to conduct competition, including Role of Board of Assessors, Professional Adviser and Technical Advisers.
- **Code of Professional conduct**
- Conditions Governing the **Appointment of Architects**, Scale of Professional charges, Execution of work and payment of fee.

UNIT- III

- Duties, Responsibilities and Liabilities of **Client, Architect, Contractor** and their mutual relationship.
- **Tenders-** Type, Process, Scrutiny and Selection of Contractor, Pre Qualification and Registration of Contractor.
- Concept of **Contract.**
- **Copy Right Act** as Applicable to Architectural work.
- **Complaints –** Procedure for lodging complaints, and their Resolution based on Indian Architects Act 1972
- **Valuation -** Purpose, Objective, Types and Method of valuation.
- Arbitration and Reconciliation Act.

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of Expert lectures from Architects working in the profession, visits to the offices and discussions with reputed Architects.

- Students should be encouraged to attend professional meets organized by the professional bodies including IIA, COA, IOE etc.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively)
- In addition,three questions are to be set from UNIT 1 & II. Two question are to be set from Unit III
- Students are required to attempt five questions including compulsory question with minimum one question from each UNIT.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Indian Institute of Architects Hand Book – IIA
- The Indian Architects Act, 1972.
- Council of Architecture – Hand Book of Professional Documents – 2007.
- Indian Arbitration Act.
- Chakraborty M, **"**Estimating, Costing & Specification and Valuation in Civil Engineering and Service Tax Manual"
- Nananvati R, "**P**rofessional Practice"
- Apte V S, "Professional Practice & Management"

B.ARCHITECTURE – X SEM.
DISASTER MANAGEMENT -I
(BACH-1004)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.

INTENT

- To make the students understand the various Pre & Post- disaster design and management measures to make buildings safe against Earthquakes.

CONTENT

UNIT-I

- **Disasters**: Introduction, Typologies, Causes, Effects and prevention
- **Earthquake**: Causes, Effects, Problems & design issues
- General Principles of designing **RCC & Masonry buildings** against Earthquake
- **Special construction techniques** to make buildings safe against Earthquake
- Study of **Earthquake Zones** in India-- features and Design/ construction requirements
- **Role of Architects and Planners** in creating Safe Buildings/Cities

UNIT-II

- Introduction , Causes, Effects of **Fire, Floods, Cyclones, Landslide, Tsunami, Avalanche, etc.**
- General requirements, principles and measures for **making safe building design** against Fire, Floods, Cyclones, Landslide, Tsunami Avalanche, etc.
- **Special Technique** for constructing safe buildings for above disasters
- **Pre- disaster and Post- disaster management-** problems, issues and options

TEACHING METHODOLOGY

- Teaching in the subject will be a combination of Expert lectures, Site visits to Structurally safe buildings and discussions with reputed Architects.
- Students should be encouraged to attend professional meets organized by the professional bodies including IIA, COA, IOE etc. on Disaster resistant buildings.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answer type containing 5 questions of 2 marks each (10 Marks) is to be set from the entire syllabus (4 Marks and 6 marks from unit I and Unit –II respectively)
- In addition, four questions are to be set from UNIT 1 & II.
- Students are required to attempt five questions including compulsory question with minimum one question from each UNIT.
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.