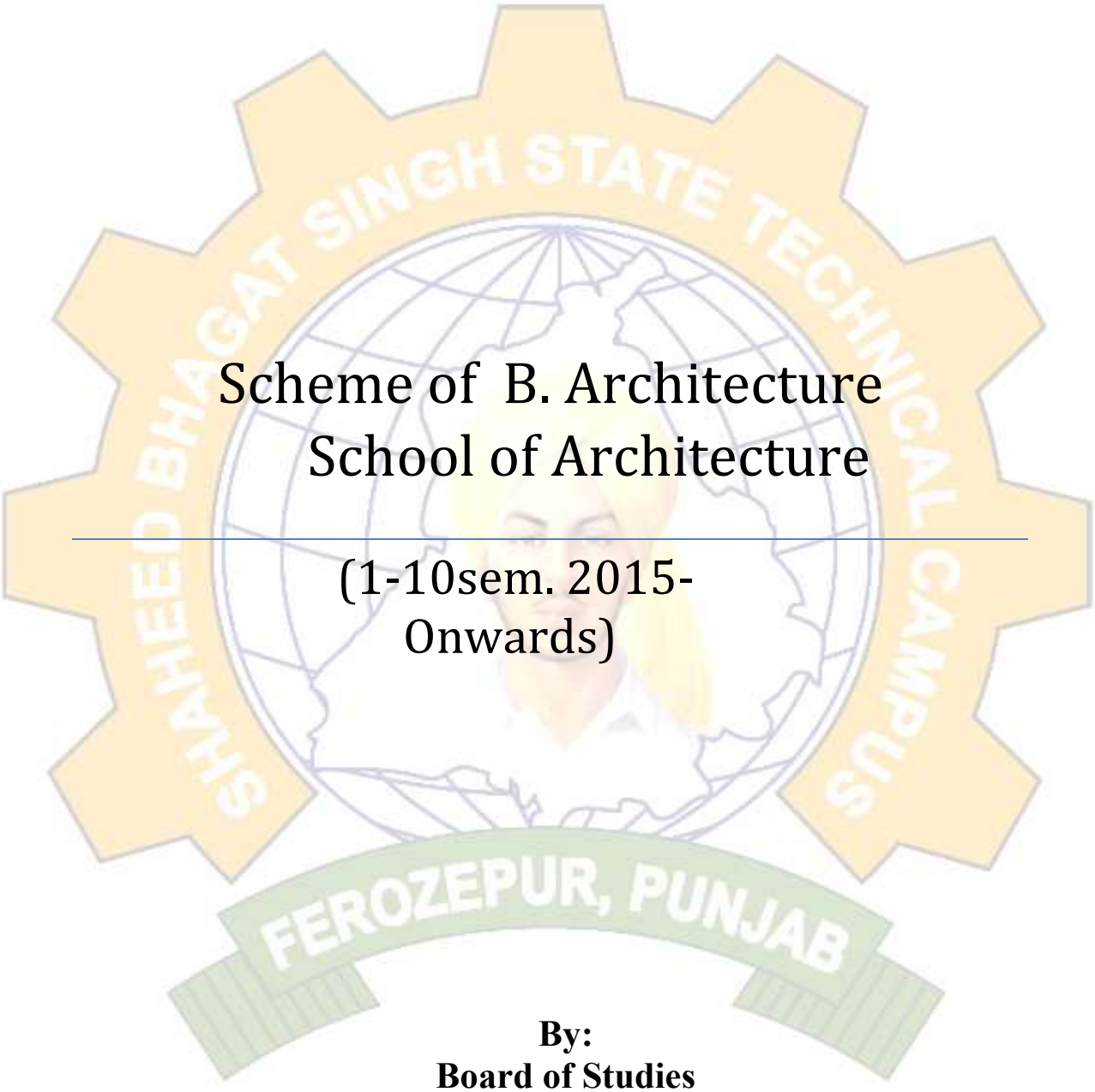
SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR



Scheme of B. Architecture
School of Architecture

(1-10sem. 2015-
Onwards)

By:
Board of Studies
School of Architecture

Semester – I

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-101	Architectural Design -I	1	0	5	0	120	80	200	6	6 hrs
AR-102	Building Construction-I	1	0	3	0	90	60	150	4	4 hrs
AR-103	Architectural Drawing-I	1	0	3	0	90	60	150	4	4 hrs
AR-104	Architectural Graphics-I	1	0	2	0	60	40	100	3	4 hrs
AR-105	Structure System-I	2	1	0	0	60	40	100	3	3 hrs
AR-106	Building Science- I (Materials)	2	1	0	0	40	60	100	3	3 hrs
AR-107	Workshop-I	0	0	0	2	50	-	50	1	Internal VivaVoce
BTHU-101	Communicative English	3	0	0	0	40	60	100	3	3 hrs
Note : Compulsory one week workshop for Human Values.										
	Total	**11**	**2**	**13**	**2**	**550**	**400**	**950**	**27**	

Semester – II

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-201	Architectural Design -II	1	0	5	0	120	80	200	6	6 hrs*
AR-202	Building Construction-II	1	0	3	0	90	60	150	4	4 hrs
AR-203	Architectural Drawing-II	1	0	3	0	90	60	150	4	4 hrs
AR-204	Architectural Graphics-II	1	0	2	0	60	40	100	3	4 hrs
AR-205	Structure Design-I	2	1	0	0	40	60	100	3	3 hrs
AR-206	Theory of Design-I	2	1	0	0	40	60	100	3	3 hrs
AR-207	History of Architecture-I	3	0	0	0	40	60	100	3	3 hrs
AR-208	Workshop-II	0	0	0	2	50	-	50	1	Internal VivaVoce
AR-209	Study Tour	0	0	0	0	50	-	50	1	-
***Note :** Evaluation will be through external jury.										
	Total	**11**	**2**	**13**	**2**	**680**	**420**	**1100**	**28**	

Semester – III

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-301	Architectural Design -III	2	0	5	0	120	80	200	7	6 hrs*
AR-302	Building Construction-III	1	0	4	0	90	60	150	5	4 hrs
AR-303	History of Architecture-II	3	0	0	0	40	60	100	3	4 hrs
AR-304	Climate and Architecture	2	1	0	0	40	60	100	3	3 hrs
AR-305	Structure Design-II	2	1	0	0	40	60	100	3	3 hrs
AR-306	Building Science-II (Geology)	2	1	0	0	40	60	100	3	3 hrs
AR-307	Surveying and Leveling	2	1	0	0	40	60	100	3	3 hrs
AR-308	Computer Application-I	0	0	0	3	40	60	100	1	External* VivaVoce
***Note :** Evaluation will be through external jury.										
	Total	**14**	**4**	**9**	**3**	**450**	**500**	**950**	**28**	

Semester – IV

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-401	Architectural Design -IV	2	0	5	0	120	80	200	7	6 hrs*
AR-402	Building Construction- IV	1	0	4	0	90	60	150	5	4 hrs
AR-403	Theory of Design-II	2	1	0	0	40	60	100	3	3 hrs
AR-404	Structure Design-III	2	1	0	0	40	60	100	3	3 hrs
AR-405	Building Services-I	2	1	0	0	40	60	100	3	3 hrs
AR-406	History of Architecture-III	3	0	0	0	40	60	100	3	3 hrs
AR-407	Computer Application-II	0	0	0	3	40	60	100	1	External* VivaVoce
AR-408	Study Tour	0	0	0	0	50	-	50	1	-
***Note:** Evaluation will be through external jury. *Students have to go for a practical training for minimum three weeks under qualified architects during summer vacations. Evaluation shall be done at the beginning of first week of the next semester.										
	Total	**12**	**3**	**9**	**3**	**460**	**440**	**900**	**28**	

Semester –V

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-501	Architectural Design -V	2	0	6	0	180	120	300	8	12 hrs*
AR-502	Building Construction-V	1	0	4	0	90	60	150	5	4 hrs
AR-503	Landscape Architecture-I	2	0	0	0	40	60	100	2	3 hrs
AR-504	Theory of Design-III	2	0	0	0	40	60	100	2	3 hrs
AR-505	Building Services-II	2	0	0	0	40	60	100	2	3 hrs
AR-506	History of Architecture-IV	2	0	0	0	40	60	100	2	3 hrs
AR-507	Onsite Training	0	0	0	0	100	-	100	2	-
AR-508	Advance Building Materials	2	0	0	0	40	60	100	2	3 hrs
***Note :** Evaluation will be through external jury										
	Total	**13**	**0**	**10**	**0**	**570**	**480**	**1050**	**25**	

Semester –VI

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-601	Architectural Design -VI	2	0	6	0	180	120	300	8	12 hrs*
AR-602	Building Construction-VI	1	0	4	0	120	80	200	5	4 hrs
AR-603	Interior Design-I	2	0	0	0	40	60	100	2	3 hrs
AR-604	Estimating, Costing and Specifications-I	2	2	0	0	40	60	100	3	3 hrs
AR-605	Architectural Legislation-I	2	0	0	0	40	60	100	2	3 hrs
AR-606	Building Services-III	2	0	0	0	40	60	100	2	3 hrs
AR-607	Fundamental of Sustainable Architecture	2	0	0	0	40	60	100	2	3 hrs
AR-608	Study Tour	0	0	0	0	50	-	50	1	-
***Note :** Evaluation will be through external jury.										
	Total	**13**	**2**	**10**	**0**	**550**	**500**	**1050**	**25**	

Semester –VII

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Training
						Internal	External			
AR-701	Practical Training Programme	0	0	0	0	350	150	500	18	*One Full Semester
***Note :** The External marks shall be awarded through External jury viva voce.										
	Total	**0**	**0**	**0**	**0**	**350**	**150**	**500**	**18**	

Semester –VIII

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-801	Architectural Design -VII	2	0	10	0	200	100	300	12	*No University Exam
AR-802	Building Construction & Materials -VII	2	0	3	0	50	50	100	5	4 hrs
AR-803	Urban Design-I	1	0	3	0	50	50	100	4	3 hrs
AR-804	Housing-I	2	1	0	0	50	50	100	3	3 hrs
AR-805	High Rise Buildings-I	2	1	0	0	50	50	100	3	3 hrs
	Elective-I	2	1	0	0	50	50	100	3	3 hrs
***Note:** The External marks shall be awarded through External jury viva voce. ELECTIVE-I (choose any one from AR-806 to AR-808) **AR-806** (el) - Architectural conservation-I , **AR-807** (el) – Sustainable architecture-I, **AR-808** (el) - Building maintenance -I										
	Total	**11**	**3**	**16**	**0**	**450**	**350**	**800**	**30**	

Semester –IX

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-901	Architectural Design -VIII	2	0	10	0	200	100	300	12	*No University Exam
AR-902	Building Construction & Materials -VIII	2	0	4	0	50	50	100	6	4 hrs
AR-903	Town Planning-I	2	1	0	0	50	50	100	3	3 hrs
AR-904	Building Economics-I	2	1	0	0	50	50	100	3	3 hrs
	Elective –II (One out of **AR-905, AR-906)**	2	1	0	0	50	50	100	3	3 hrs
	Elective –III (One out of **AR-907, AR-908)**	2	1	0	0	50	50	100	3	3 hrs
***Note:** The External marks shall be awarded through External jury viva voce. ELECTIVE-II (anyone of the following)**AR-905**(el) – Hill Architecture-I , **AR-906** (el) - Vernacular Architecture -I ELECTIVE- III (anyone of the following) **AR - 907** (el) – Traffic and Transportation-I , **AR- 908** (el) - Landscape Architecture -II										
	Total	**12**	**4**	**14**	**0**	**450**	**350**	**800**	**30**	

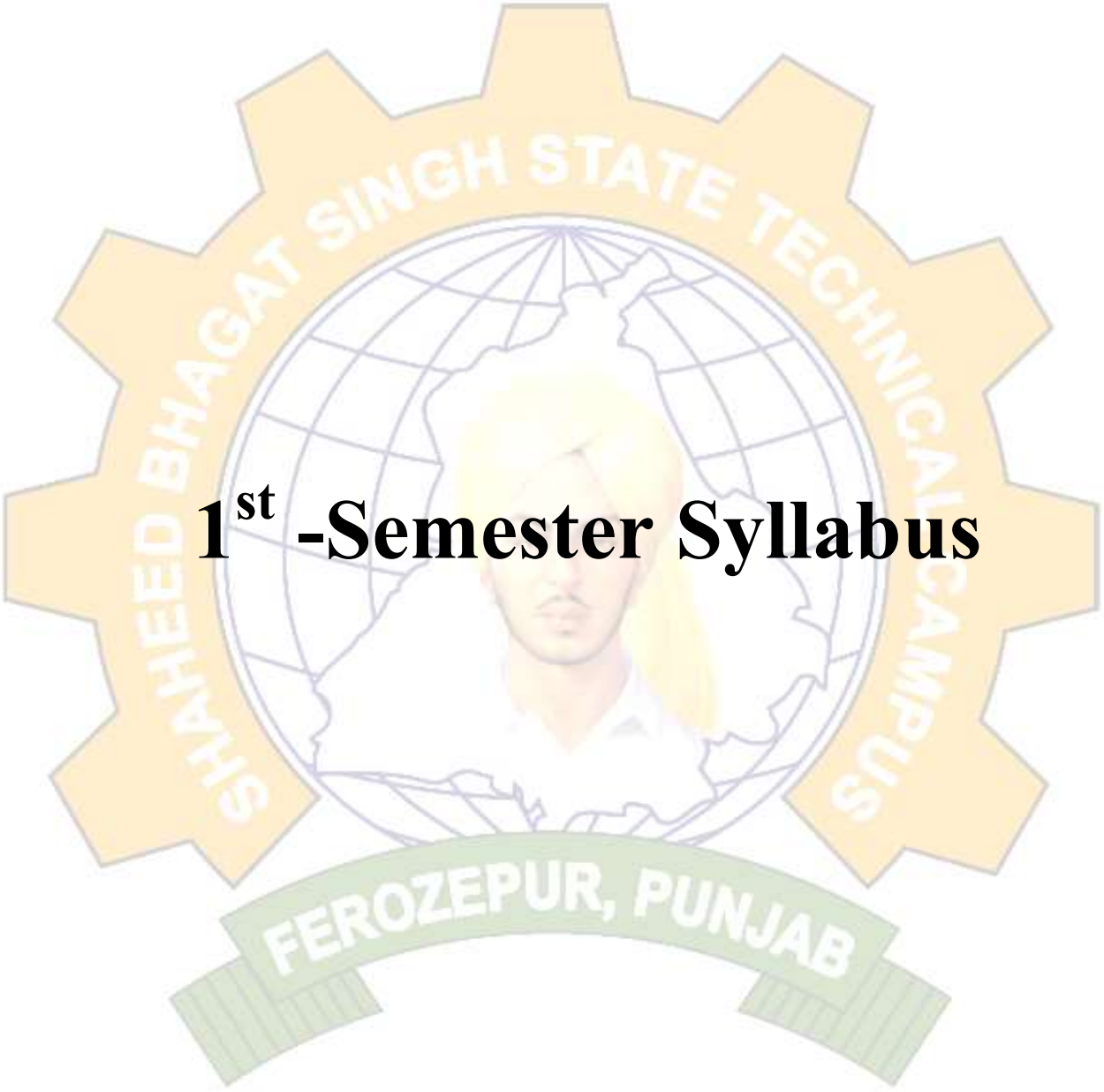
Semester –X

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-1001	Architectural Design – IX (Thesis – Project)	0	0	24	0	300	250	550	24	*No University Exam
AR-1002	Construction Management –I	3	0	0	0	50	50	100	3	3 hrs
AR-1003	Professional Practice –I	3	0	0	0	50	50	100	3	3 hrs
AR-1004	Disaster Management –I	2	1	0	0	50	50	100	3	3 hrs
***Note:** The External marks shall be awarded through External jury viva voce. ➢ Student must score qualifying marks in the subject Architectural Design – IX (Thesis – project) for being eligible to obtain a degree in B.Arch.										
	Total	**8**	**1**	**24**	**0**	**450**	**400**	**850**	**33**	

SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

SCHOOL OF ARCHITECTURE
SYLLABUS FOR B. ARCHITECTURE
(SEMESTER: I - X)
(2015-onwards)

(ii) Subject to change in the syllabi at any time.
Please visit the University website time to time.



1st -Semester Syllabus

B.ARCHITECTURE-IST SEMESTER
ARCHITECTURAL DESIGN - I
(AR – 101)

University Exam Marks - 80
Sessional Marks - 120
Duration of Exam - 06 hrs.
No. of periods – 06 per 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.

PART A

1. Introduction to Basic Design
2. Objectives of Design
3. 2D compositions with basic geometric shapes, colour, texture and pattern.
4. Door elevation
5. Carpet design, Backdrop of stage

PART B

1. Basic Elements of Design – Point, Line, Plane, Volume, Scale, Proportion, Colour & Texture.
2. Mural with geometrical shape
3. Floor tile design & paving patterns.
4. Sky line of city/village

PART C

1. Principles of Design – Rhythm, Focus/Emphasis, Balance, Unity, Contrast, Repetition & Variety.
2. Experience in 3D Design, compositions with simple forms like cube, cuboids, cylinder, cone, prism etc.
3. Compositions with 3-D Objects. **(Black & white and colours).**

GUIDELINES

1. **Two questions** are to be set from **each part** and students will be required to attempt **one question** compulsory from each part.
2. Question paper is to be set covering the entire syllabus.

NOTE

Evaluation is to be done through viva voce by external jury 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
BUILDING CONSTRUCTION - I
(AR – 102)

University Exam Marks - 60
Sessional Marks - 90
Duration of Exam. - 04 Hrs
No. of periods hrs. - 04 per week

INTENT
The overall intent is to study various construction methods.

CONTENTS

PART A

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)

PART B
5. Arches-Flat, Segmental and Semicircular Arch in Brick masonry.
6. Lintels, sills, coping and threshold details.
7. Design of simple Brick jalli.

PART C
8. Dressing, laying and bonding in Stone Masonry
   - Random Rubble
   - Coursed Rubble
   - Ashlar
9. Finishing of brick and stone surfaces

GUIDELINES
- **Two questions** are to be set from **each part**, and students will be required to attempt **one question** compulsory from each part.
- 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	

B.ARCHITECTURE-IST SEMESTER-I
ARCHITECTURAL DRAWING- I
(AR – 103)

University Exam Marks - 60
Sessional Marks - 90
Duration of Exam - 4hrs.
No. of contact hrs. - 04 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

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

PART B
- Orthographic Projections of the Point, Lines, Planes and Solid in various positions in the First Quadrant.
- Section of Solids e.g. Cube, Cuboid, Cone, Cylinder, Pyramid, Prism etc.

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

GUIDELINES
- A total of **four questions** are to be set, out of which students will be required to attempt **three questions**.
- Question paper is to be set covering the entire syllabus.

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

B.ARCHITECTURE-IST SEMESTER
ARCHITECTURAL GRAPHICS- I
(AR – 104)

University Exam Marks - 40
Sessional Marks - 60
Duration of Exam - 04 hrs.
No. of periods - 03 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

PART A
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.

PART B
- 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.

PART C
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, out of which students will be required to attempt any **three questions**.
- **One compulsory question** is to be set.
- Question paper is to be set covering the entire syllabus.

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-I SEM.
STRUCTURE SYSTEM - I
(AR - 105)

Sessional Marks - 60
Uni.Exam.Marks - 40
Duration of Exam. - 03 hrs.
No. of periods – 03 per week

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

PART A
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

PART B
Bulk Active Structure System:
- Framed structure
- Slabs (one way and two way)
- Flat slab
- Waffle slab

Vector Active Structure System:
- Trusses
- Space frames
- Geodesic Dome

PART C
Form Active Structure System:
- Funicular structures (Cables and Arches)
- Tents
- Pneumatic structures

Surface Active Structure System:
- Singly curved shells
- Doubly curved shells
- Hyperbolic paraboloids
- Folded plates
- Y-beams

TEACHING METHODOLOGY
 Emphasis shall be on making students understand the principles and systems involved in various topics. The students should be made to Co-Cordinate the fabrication of atleast four models to demonstrate the various structural system. Students be taken to Pragati Maidan & other Building centres in New Delhi for better exposure.

GUIDELINES FOR PAPER SETTER
Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.

REFERENCE BOOKS:

 RCC:- Krishna Murthy
 R. K. Bansal, “Engineering Mechanics & Strength of Materials Publisher, Laxmi Publications Pvt Limited, 1998.
 Khurmi-Structure Mechanics
 Prof.Harbhajan Singh-Theory of Structure

B.ARCHITECTURE-I SEM.
BUILDING SCIENCE – I
(BUILDING MATERIALS)
(AR - 106)

Sessional Marks - 40
Uni.Exam.Marks - 60
Duration of Exam. - 03 hrs.
No. of periods – 03 per week

Contents:

PART A
- Elementary elements of a building; their functions and characteristics.
- Basic building material – Brick, Timber.

PART B
- Basic building materials –Stone, Lime, Cement.

PART C
- Basic building materials –Concrete.
- Basic finishing materials – Paints and varnishes.

General Guidelines for the teacher:

Stress is to be laid on the use and behaviour of building materials in given situations than on manufacture.

Instructions for Examiner / Paper Setter:

Two questions are to be set from each part. Out of each unit only one question is to be attempted by the candidate.

REFERENCE BOOKS:

Engineering materials Rangwala
Building Construction Punmia, B.C.

B.ARCHITECTURE-IST SEMESTER
WORKSHOP- I
(AR - 107)

University Exam Marks – 00 (No Exam)
Sessional Marks - 50
No. of periods - 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.

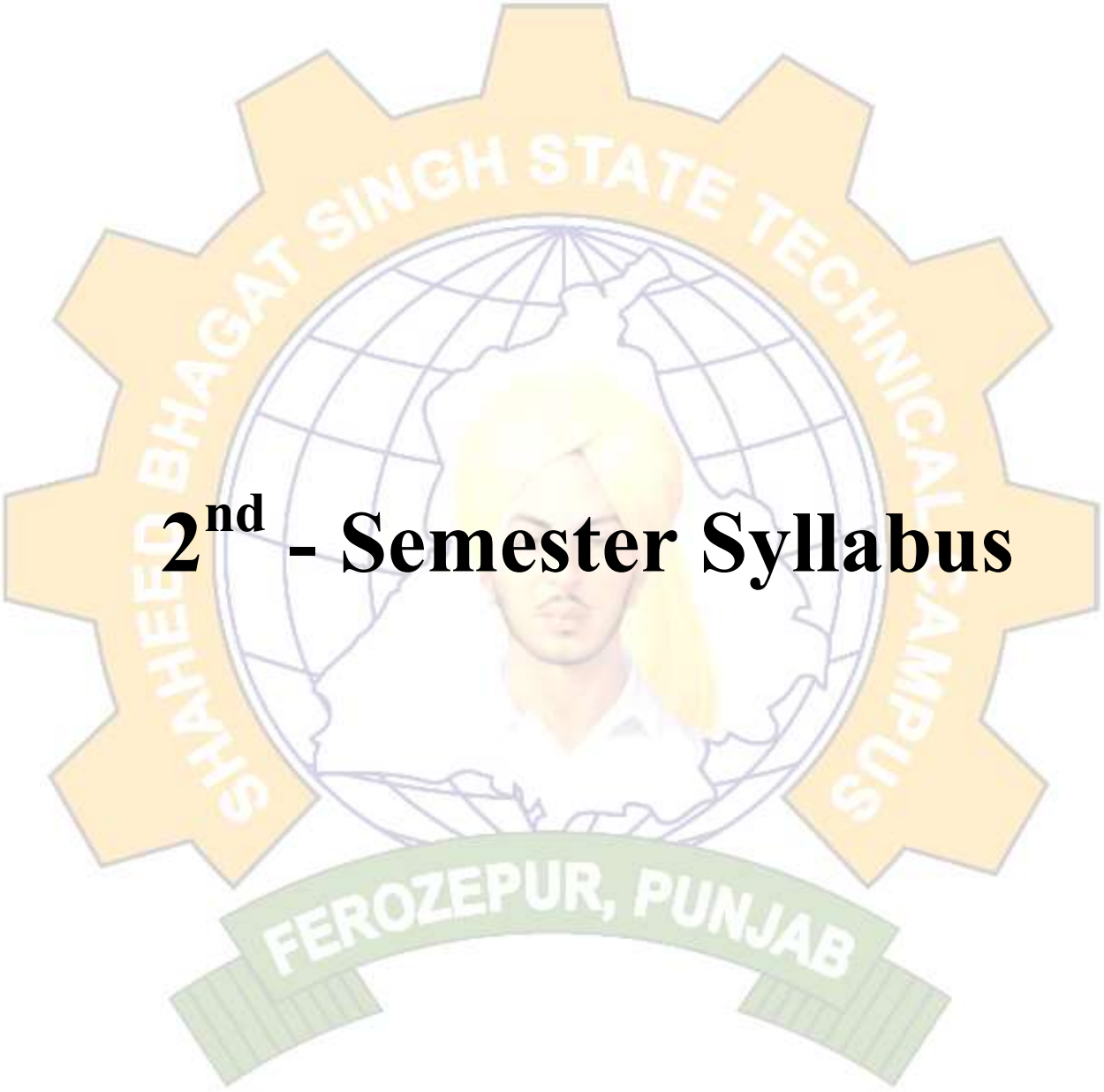
GUIDELINES
Continuous Evaluation shall be made of students work based on various models, assignments and market surveys.

B.ARCHITECTURE – I SEM.
COMMUNICATIVE ENGLISH
(BTHU - 101)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam - 3 hrs.
No. of periods – 03 per week

Objectives and Expected outcome:
The objective is to help the students to become independent users of English language. Students should be able to understand spoken and written English language of varied complexity on most including some abstract topics; particularly the language of their chosen technical field. They must show awareness of appropriate format and a capacity for explaining their views in a rational manner. The students should be able to converse fluently, without strain with international speakers of english in an accent and lexis that is widely understood across the globe. They will be able to produce on their own texts which are clear and coherent.
1. Reading: Reading texts of varied complexity; speed reading for global and detailed meaning; processing factual and implied meanings
2. Vocabulary: Building up and expansion of vocabulary; active use of the prescribed expressions in the appropriate context
3. Grammar: Revising and practicing a prescribed set of grammar items; using grammar actively while processing or producing language
4. Writing: The qualities of good writing; Learning the prescribed written expressions of conventional use; writing business letters, emails; reports, summaries and various forms of descriptive and argumentative essays

Learning and Teaching Activities:
PART A (Reading)
The prescribed reading textbook for students will be S. P. Dhanavel English and Communication Skills for Students of Science and Engineering (with audio CD), Orient Blackswan. They will go through the reading texts themselves with the help of a dictionary or word power as given at the end. As they progress from one reading to another they should learn to read fast with greater degree of understanding of both concrete and abstract topics. While taking up the textbook lessons in the classroom, the teacher shall ensure that students can do the following:
i. Identify the significant points and conclusions as given in the text.
ii. Handle large texts (even outside the prescribed book) with overall comprehension of the links between arguments and the finer distinction between stated and implied meanings.
iii. Generally read the stance or the point of view of the writer and present it in the form of a summary
iv. Use the vocabulary learnt in the lessons (especially given in „word power") productively in various writing tasks as suggested at the end of each lesson.
v. Profitably use the grammatical items as discussed at the end of each lesson while producing language for communication.Besides the textbook, the teacher must insist that students extend their reading by taking up additional texts of their own choice.
PART B (Writing)
In addition to the various exercises given at the end of each lesson of Dhanavel"s book, the teacher shall use Anne Laws Writing Skills, Orient Blackswan to teach the language and conventions of writing. The students must learn the language that expresses various cognitive functions that are frequently used in writing. With the help of the teacher who will give them adequate practice, the students should be able to:
i. Convey information on concrete or abstract topics with clarity and precision.
ii. Write about objects or events with appropriate detail in both descriptive and narrative form.
iii. Explain ideas and build up arguments with adequate support in a convincing manner.
iv. Use language with some degree of flexibility in consideration to the reader.
v. Produce effectively such forms of professional writing as business letter, emails, notes, memos, reports summaries etc.
While teaching, the teacher must inculcate in students the habit of revising their writing. The teacher can also use and recommend the relevant sections of the following books for developing writing skills in students.
Suggested Readings/ Books
1. Vandana R Singh, The Written Word, Oxford University Press, New Delhi
2. KK Ramchandran, et al Business Communication, Macmillan, New Delhi



2nd - Semester Syllabus

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

Uni.Exam.Marks - 80
Sessional Marks - 120
Duration of Exam. – 06 hours (Evaluation to be done through university viva- voce by external jury)
No. of periods – 06 per week

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

PART A
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.

PART B
A small single storied dwelling unit like Bachelor house, Tourist cottage, dog house, gardener's House etc.

PART C
Acquainting, the students with drawing the plans sections and elevations of a room. Layouts of furniture, fixtures in various spaces like dining room, Bed room, Class room, Office etc.

Minimum 1 exercise to be taken from each part.
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 jury 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-II
(AR - 202)

Uni.Exam.Marks - 60
Sessional Marks - 90
Duration of Exam. - 04 hours
No. of periods – 04 per week

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

CONTENTS

PART 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.

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

PART C
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.
. Section through Single Story of load bearing structure and Frame structure.

GUIDELINES FOR PAPER SETTER
1. Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
2. 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
(AR - 203)

Uni.Exam.Marks - 60
Sessional Marks - 90
Duration of Exam. - 04 hours
No. of periods – 04 per week

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.

PART A
Isometric/ Axonometric projections
 Isometric /Axonometric of simple forms.

PART B
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.

PART C
 Sciography in Plans and Elevations
 Sciography in Axonometric Projection
 Sciography in Perspectives (both one point & two point perspectives)

GUIDELINES FOR PAPER SETTER
1. Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
2. Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

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
(AR - 204)

Uni.Exam.Marks - 40
Sessional Marks - 60
Duration of Exam. - 04 hours
No. of periods – 03 per week

INTENT:-To develop conceptual and perceptual skills, in different media and techniques.

CONTENT:-Rendering in Pencils and Colour media.

PART A -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.

PART B- 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.
. Cut & Paste method for making Compositions & for Rendering Perspectives

PART C- 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

GUIDELINES FOR PAPER SETTER
A total of **four questions** are to be set, out of which students will be required to attempt any **three questions**.
One compulsory question is to be set.
Question paper is to be set covering the entire syllabus.

References:
· Crowe Philip; Architectural Rendering
· Albert & Habe ; Architectural Rendering
· Jaxtheim ; How to Paint & Draw

B.ARCHITECTURE- II SEM.
STRUCTURE DESIGN - I
(AR - 205)

University Exam Marks – 60
Sessional Marks – 40
Duration of Exam. - 03 Hrs
No. of periods - 03 per week

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

CONTENTS

PART A
Introduction to Elementary theory of structure, Centre of gravity (CG), definition, centre of gravity of plane figures, CG by method of moments, numerical problems, Moment of Inertia; MI of plane area, MI by method of integration, MI of rectangular section, theorem of parallel axis (M1) and perpendicular axis and numerical problems.

PART B
Bending moment (BM), shear force (SF), type of supports, loads and beams, relation between SF and BM, BM and SF diagram for cantilever and simply supported beams with concentrated load, uniformly distributed load, design examples.
Moment of resistance, theory of bending, bending stresses, basic equation of bending, section modulus of rectangular and circular sections. Numerical problems.

PART C
Classification of frames, analysis of perfect frame, assumptions, method of sections, method of joints and design examples. Link polygon, method of construction, resultant of concurrent forces, non–concurrent forces, co–planar parallel force system and numerical problems.

GUIDELINES

Two questions are to be set from each unit, out of each unit only one question is to be attempted by the candidate.

REFERENCES:

1. Punmia, B.C.,"Strength of Materials and Theory of Structures", Vol. I, Laxmi Publications, New Delhi, 2010.
2. Ramamurtham, S.; "Strength of Materials", Dhanpatrai & Sons, New Delhi, 2011.
3. Nash, W.A., "Strength of Materials", Schaums Series, McGraw Hill Book Company, New York, 1989.
4. Bansal, R.K., "Engineering Mechanics and Strength of Materials", Lakshmi Publications, New Delhi, 2009.
5. Rajput, R.K., "Strength of Materials", S .Chand & Company Ltd., New Delhi 2010.

B.ARCHITECTURE-II SEM.
THEORY OF DESIGN-I
(AR - 206)

Uni. Exam Marks - 60
Sessional Marks - 40
Duration of Exam. - 03 hours
No. of periods – 03 per week

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
PART A
Theory of design, its scope and application
Primary Elements of Design such as Point, Line, Planes and Volume.
Principles of Architecture Design

PART B
Introduction to Form
Visual Properties of Forms.
Regular and Irregular Forms.
Transformation of Forms.
Formal Collision of Geometry.
Articulation of Forms

PART C
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
Two questions are to be set from each part, out of each part only one question is to be attempted by the candidate.

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
(AR-207)

Uni. Exam. Marks - 60
Sessional Marks - 40
Duration of Exam. - 03 hours
No. of periods – 03 per week

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:-
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.

PART A
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.

PART B
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

PART C
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
Two questions are to be set from each part, out of each part only one question is to be attempted by the candidate.

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.
WORKSHOP- II
(AR - 208)

Uni. Exam. Marks - No exam
Sessional Marks - 50
Duration of Exam. – Internal Viva Voce
No. of periods – 02 per week

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 .

PART A
Product design
Design & Model Making of Furniture, Lamp shades and other Interior & Exterior Elements

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

PART B
Clay Modelling
Pinching
Coiling Techniques
Slab Techniques

PART C
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.
PROJECT ORIENTED STUDY TOUR
(AR-209)

Uni. Exam Marks - No exam
Sessional Marks - 50
Duration of Exam. – Internal Viva Voce

Brief:

The concept is to provide an insight into works of contemporary Indian Architects and also historical architecture as available in western and northern parts on India. The study tour shall visit places enlisted under any one of the options mentioned below, the choice of the option in each successive years shall not be repeated.

Option – I **Jaipur, Ajmer, Jodhpur, Jaisalmer, Mount Abu, Chittaurgarh, Udaipur, Ujjain, Indore / Mandu, Bhopal / Sanchi.**

Option – II **Chennai, Banglore, Mysore, Ajanta – Ellora, Bombay, Pune, Goa, Hyderabad.**

Guideline for the Teacher: Before the study tour proceeds the students shall collect literature regarding complexes / buildings etc. to be visited in the tour and shall present the same for a review. After incorporating whatever modification or improvements recommended by the concerned teacher / teachers the same shall be provided to the students as hand outs (either in condensed form or in toto). Study of Building Materials and details through sketches and photographs to be made as an individual activity and is to be submitted in a report form. Study of complexes visited to be made in groups of 3 – 4 students.Viva – Voce on individual basis for both the submissions will be conducted as apart of Internal Assessment.

3rd - Semester Syllabus

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

Uni.Exam Marks - 80
Sessional Marks - 120
Duration of Exam. – 06 hrs. (Evaluation to be done through viva- voce by external jury)
No. of periods – 07 per week

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 such as human dimensions in various postures (in applied form), their relation to everyday activity.

TOPICS
- Design of House, Primary School, Cafeteria, Post Office, Guest House, Youth Hostel etc.
- 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 jury.
- Answer sheets after exam shall be retained by the institute.

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-III
(AR - 302)

Uni.Exam Marks - 60
Sessional Marks - 90
Duration of Exam – 04 hrs
No. of periods – 05 per week

INTENT

 To make students understand and appreciate, various methods of building construction and science related to them.

CONTENT

PART A

- Types of Staircases-- Design and detailing and construction of RCC and Steel Staircases.
- R.C.C. & Steel Form work and Shuttering and Scaffolding details for-
  Column (square and round)
  Slab and Beam
  Wall
  Staircase

PART B

- Cladding of interior and exterior facades in various materials such as Brick, Tile and Stone.
- Section through a Double Storied Building showing the details of Foundation, Floor, Window, Lintel, Chhajja, Staircase, R.C.C Roof, Terrace and Parapet.
- Construction of PCC, Terrazzo, (Cast-in-situ and tiles) and various Stone, Marble, Vitrified Tile flooring.

INSTRUCTIONS TO THE TEACHER

- Site Study of scaffolding and shuttering is to be conducted.
- Emphasis should be laid on making students understand complete construction details of double- storied structure.

GUIDELINES FOR PAPER SETTER

1. Three questions are to be set from part A & B. Students are required to do two questions from each part.
2. Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCES BOOKS

 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.
HISTORY OF ARCHITECTURE-II
(AR-303)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

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 fabric, available building materials, prevailing climate, topography, complex structural problems and building technology available**.**

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

TOPICS:
PART-A
Roman Architecture

PART-B
Christian Architecture
Byzantine Architecture

PART-C
Romanesque Architecture

PART-D
Gothic Architecture

TEACHING METHODOLOGY
- For each period, stress is to be laid on the Architectural character and elements of Architecture with only one or two representative examples to highlight these 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 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus.
- Two questions are to be set from each part and student is required to attempt one question from each part.
- Student is required to attempt five questions in all including the compulsory question.
- 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.
CLIMATE AND ARCHITECTURE
(AR – 304)

Uni.Exam Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

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

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

PART B
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

PART C
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
- Wind Movement and Natural Ventilation

PART D
Climatic Zones
- Tropics and its Climatic zones
- Macro and Micro Climate (site climate)
- Role of Climate with respect to Shelter
- Principles of Architectural Design and Study of various Indigenous Shelters in response to various design solutions of Climate Zones in the Tropical belt of India

GUIDELINES FOR PAPER SETTER
- One compulsory question of short answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus.
- Two questions are to be set from each part and student is required to attempt one question from each part.
- Student is required to attempt five questions including compulsory question.
- 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.
STRUCTURE DESIGN-II
(AR - 305)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

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

CONTENT:

PART A
Design of single reinforced beams, doubly reinforced beams, cantilever beams; depth/ thickness of section area of reinforcement , stell shear check, shear reinforcement design examples. Introduction to T beams and L beams

PART B
Design of one way slab; by/ex ratio depth/thickness of section, area of reinforcement, shear check design examples, Design of two way slab; by/ex ratio IS 456 code provisions, their check, design examples.

PART C
Design of columns; long short columns, basic equation of design IS 456 code provisions, section of column, longitudinal and lateral reinforcement.

PART D
Design of isolated square and rectangular footing , depth frame consideration of bending moment ,one way shear and two way shear area of reinforcement, design examples.

GUIDELINES FOR THE TEACHER
Structural design shall be supplemented by structural drawings.

INSTRUCTIONS FOR THE EXAMINER/PAPER SETTER
- One compulsory question of short answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus.
- Two questions are to be set from each part and student is required to attempt one question from each part.
- Student is required to attempt 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.
BUILDING SCIENCE – II (GEOLOGY)
(AR - 306)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

INTENT : To make students understand the Role and Importance of rocks, soil and their characteristic properties in forming the Earth.

CONTENT:

PART A
General Geology of Earth's crust , Modes of Rock formation.
Rock forming minerals– Their characteristics and specifications. Factors governing selection of Building Stones, geological criteria governing selection of sites.

PART B
Type and characteristics of soils: classification of soils: particle size, Texture; Unified Soil Geological and I.S. classification system.
Introduction to Soil Mechanics, Specific gravity, void ratio content and functional relationship,

PART C
Bearing Capacity of Soil:
Definitions, factors affecting bearing capacity of clay and sandy soils .Determination of bearing capacity by plate lead test. Methods of improving bearing capacity of soil; Role & Importance of soil in building design/ safety.

Instructions for Examiner / Paper Setter:
 One compulsory question containing 6 questions of 2 marks (12 marks), each requiring short answers, are to be set from the entire syllabus
 The examiner is required to set another six questions (two from each unit), out of which the students are required to attempt any four questions (selecting at least one from each unit).
 Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

 Geology for Engineers - D.S. Arora
 Soil Mechanics and Foundation Engineering-K.R. Arora
 Building Materials - P.N. Khanna
 B.C. Punmia

B.ARCHITECTURE - III SEM.
SURVEYING AND LEVELLING
(AR - 307)

Uni.Exam Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

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:

PART A
Surveys.
***Chain Surveying** :-
Principal ,equipment used, Methods of chaining , base line and stations, obstacles in chaining. Location of inaccessible points by chain,.
***Prismatic Compass survey: -**
Prismatic & Surveyors compass, methods of traversing, adjustment of closing error by graphical method.
***Plane Table survey: -**
Different equipment & methods of plane tabling,

PART B
Levelling: -
Definitions, methods of levelling, dumpy level, levelling staff, Temporary adjustment of a level, Theory of direct levelling, Differential levelling
Theodolite & its structure , Measurements of horizontal angles.

PART C
Contouring: -
Contour interval, Characteristics & Interpolation of contours, contours gradient, Use of contours maps, computation of volume of earth/ Areas from contour plans, Use of Plani-meter.

PART D
Total Station
Introduction, components, Operation, Advantages/ Disadvantages, GPS, Aerial Surveying, JIS and Remote Sensing

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 equipments, stated above, shall be made available to the students by setting up a Survey lab.

GUIDELINES TO EXAMINER
- One compulsory question of short answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
- Two questions are to be set from each part and student is required to attempt atleast one question from each part.
- Students are required to attempt five questions including compulsory question.
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

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

B.ARCHITECTURE - III SEM.
COMPUTER APPLICATIONS - I
(AR – 308)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – No Exam (External Viva Voice)
No. of periods – 04 per week

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

PART A
Introduction to AutoCAD – Basics of Computer Aided Design, Application of AutoCAD in Architecture, Basic commands like copy, paste, stretch, offset, move fillet, extend, trim and other 2D commands.

PART B
Preparation of 2–D Drawings, use of various drawing commands for 2–D drawings generation and editing commands for modification of drawings, application of layers. 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.

PART C
2D modelling in Auto Cad, Google Sketch up, Basic rendering in the Auto Cad and in other Softwares in 2D.

GUIDELINE TO TEACHER
- Compulsory one week focussed workshop is to be conducted.
- 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 multi-storeyed buildings.

GUIDELINES FOR EXAMINER
- The evaluation of student shall be based on 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"

4th - Semester Syllabus

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

Uni.Exam.Marks - 80
Sessional Marks - 120
Duration of Exam. – 06 hrs . (Evaluation to be done through viva- voce by external jury)
No. of periods – 07 per week

INTENT
To make students study the the typology of Vernacular architecture prevailing in the rural context in the state of Punjab

OUTCOMES
Students having knowledge and understanding of art and science of designing buildings, material used and elements of Vernacular Architecture used in the rural areas of the state of Punjab.

CONTENTS
- Detailed study, Documentation and analysis of a rural settlement.
- Design proposal for the settlement selected for stydy based on the outcomes of analysis done by the students and designing of the buildings including Community Buildings Bank, Post office, Panchayat Ghar,/ Dharamshala, Rural Dispensary, Farmer's House, Gaushala, Village Dairy Farm, Rural School along with village plan.

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

TEACHING METHODOLOGY
- Projects/assignments to be handled by students shall include detailed study of a selected village.
- Village study shall be carried out 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 study
- Model and perspective will be compulsory.

GUIDELINES FOR PAPER SETTER
- One compulsory question is to be set
- Evaluation is to be done through viva voce by external jury 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-IV
(AR - 402)

Uni.Exam.Marks - 60
Sessional Marks – 90
Duration of Exam. – 04 hrs
No. of periods – 05 per week

INTENT
To make students understand the context of Timber in Construction.
To familiarize students with traditional/Contemporary construction methods of using timber in a single storied building.

OUTCOMES
The students should have knowledge and understanding of details and components of timber construction in buildings.

CONTENT
PART A
Roofs and Trusses (Timber)
Introduction to different types of timber 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.
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.

PART B
Doors & Windows - Design and Details of Sliding Doors, Sliding and Folding Doors in Timber.
Timber partition, timber panelling
Timber Staircase-Design and Details
Dhajji Wall Construction

TEACHING METHODOLOGY
Teaching in the subject shall be made combination of:
 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.
 Visit to Forest Research Institute, Dehradun or similar plced institutions
 Models of Trusses with roof coverings -- to be compulsory.

GUIDELINES
1. Three questions are to be set from Part A and two questions are to be set from Part B of equal marks. Student is required to attempt two questions from Part A and one question from Part B.
2. Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

 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 200

B.ARCHITECTURE – IV SEM
THEORY OF DESIGN-II
(AR-403)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs .
No. of periods – 03 per week

INTENT
To make students appreciate the basic approach, principles, elements and philosophy used by Masters of modern architecture in designing state of art buildings along with their contributions to promote the art and science of architecture.

OUTCOMES
Students should understand the basic elements and approach of Master Architects for evolving design solutions of built environment and their relevance in Architecture.

CONTENT
PART A
- Chicago School of Architecture (1880-1910)- Dankmar Adler and Louis Sullivan
- Art Nouveau Architecture (1890-1920) - Antoni Gaudi, Joseph Maria Olbrich
- New York School of Skyscraper Architecture (1900-30) - Famous New York Skyscrapers

PART B
- Early Modernist Architecture (1900-30)
- Expressionist Architecture (1910-25)
- Social Housing Architecture (1918-30)

PART C
Great masters
- Walter Gropius
- Frank Lloyd Wright
- Le- Corbusier
- Ludwig Mies van der Rohe

TEACHING METHODOLOGY
Study of Master Architect shall focus on his life, 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 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
Two questions are to be set from each part and student is required to attempt atleast one question from each part.
Students are required to attempt five questions including compulsory question.
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.

20th Century World Architecture, Phaidon publication
Jean-Louis Cohen, The Future of Architecture Since 1889, Phaidon publication
Peter Gössel, Gabriele Leuthäuser , Architecture in the 20th Century, Taschen Publications
Klaus-Jürgen Sembach, Art Nouveau, Taschen Publications
Magdalena Droste, Bauhaus, Taschen Publications

B.ARCHITECTURE - IV SEM.
STRUCTURE DESIGN - III
(AR - 404)

Uni. Exam Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

INTENT :
To make students understand and learn the principles, role and Importance of Structure in Built Environment

OUTCOME
To create appropriate skill among students to apply the knowledge of structural design to make buildings structurally safe.

CONTENTS

PART A

- Design of combined footing(Rectangular and Trapezoidal footing) using IS-456:2000 specifications,various types of combined footing.
- Design of Raft Footing with suitable design examples

PART B

- Design of Retaining walls (Cantilever retaining wall and counterfort retaining wall)
- Design examples of retaining walls

PART C

- Types of staircases, Design of dog- legged staircase
- Design of Tread and Riser, Thickness of waist slab/landing slab, area of reinforcement using IS-456:2000 specifications

GUIDELINES FOR THE TEACHER
Teaching methodlogy shall involve class room teaching , expert lectures , visit to the construction sites and making models. Structural design shall be supplemented by structural drawings.

INSTRUCTIONS FOR THE EXAMINER/PAPER SETTER
- One compulsory question of short answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus.
- Two questions are to be set from each part and student would be required to attempt minimum one question from each part.
- Student would be required to attempt five questions in all including compulsory question.
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:
- RCC DESIGN BY A.K JAIN
- RCC DESIGN BY VN VAZIR
- RCC DESIGN BY BHAVI KATTI

B.ARCHITECTURE-IV SEM.
BUILDING SERVICES-I
(AR - 405)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

INTENT

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

OUTCOME

Creating appropriate skill among students regarding use of water supply and sanitation services in Buildings.

CONTENTS

PART A

WATER SUPPLY

- Water- Role & Importance, Sources , Quality ,Impurities.
- Water Supply- Introduction, Basic Principles, Systems of Water Supply
- Water Storage – Systems, Capacity and Location.
- 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.

PART B

SANITATION

- Sanitation- Role, Importance, Basic principles of disposal of waste from buildings.
- Sanitary Fittings-- Wash basins, WC's, Bath Tubs, Sink, Urinals, Bidets, Flushing Cistern, types of 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.
- Introduction to Stack system--One pipe and two pipe systems.
- Gradients-- Purpose and Principle for laying Drains and Sewers.
- Size of Drain Pipes and Materials used.

PART C

STORM WATER DISPOSAL

- Drainage- Sub- drains, Culverts, Ditches, Gutters, Drop inlets and Catch Basins.
- Rain Water Disposal for individual buildings.
- Rain Water Harvesting and Ground water Recharging

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.
- Provision of Water Supply, Sewerage and Storm Water Disposal services shall be made integral part of the Design Studio Project .

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
- Two questions are to be set from each part and student would be required to attempt atleast one question from each part.
- Students would be required to attempt five questions in all including compulsory question.
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

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.
HISTORY OF ARCHITECTURE-III
(AR - 406)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

INTENT

To make students study the evolution of architectural solutions in historical perspective and impact of social structure , religion, building materials, climate, topography, structure on building technology **.**

OUTCOMES

Student should have basic understanding of the context and elements of of historical development in the field of Architecture .

PART- A

Temple Architecture in India

- Genesis of Hindu Architecture during the Gupta & the Chalukyan period
- Development of Dravidian Architecture through different phases: Pallavas, Cholas, Pandyas, Vijaynagar & Madura
- Indo Aryan Architecture- Orissan, Khujraho & Gujrat Architecture
- Jain Temple Architecture

PART - B

- Early Renaissance, High Renaissance, Mannerism, Baroque, Rococo
- Italian Renaissance - The idea of rebirth and revival of art
- Outline of the Architecture during the early Renaissance, High Renaissance and Baroque Periods
- Features of typical Renaissance palaces designed by Renaissance Architects,
- Study of contribution of Architects including Brunelleschi, Alberti, Bramante, Michaelangelo, Raphael Santi, Palladio, Bernini, Borromini

TEACHING METHODOLOGY

- Teaching will focus on making students understand the Architectural Characters/ features, building evolution and form with representative examples to highlight those features.
- Continuous evaluation shall be made of students work based on various models, assignments and sketching.
- The study of all the topics should be done with minimum two representative examples.

GUIDELINES FOR PAPER SETTER

- One compulsory question of short answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
- Three questions are to be set from each part and students will be required to attempt minimum one question from each part.
- Students will be required to attempt five questions in all including compulsory question.
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

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

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – No Exam (External Viva Voice)
No. of periods – 02 per week

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

OUTCOME
Students shall have the skill to draw perspectives of small design projects and show sciography through Computer Aided Techniques.

CONTENTS
PART A
- 3-D Modelling on 3-D Max.
- 3-D Modelling on Google Sketch Up

PART B
- Rendering of the View on any of the following Software

- 3D- Max,
- Photoshop,
- V-ray and
- Any other related Software.

TEACHING METHODOLOGY
- Emphasis should be laid on developing the skill pertaining to 3-D on the Softwares
- Compulsory one week focussed workshop to be conducted by an expert in computer software

GUIDELINES FOR PAPER SETTER
- Evaluation of student shall be based on the written questions to be set from the course and the practical exam conducted, based on a specific problem given to assess and evaluate the Students's knowledge related to defined course contents.

B. ARCHITECTURE- IV SEM.
STUDY TOUR
(AR - 408)

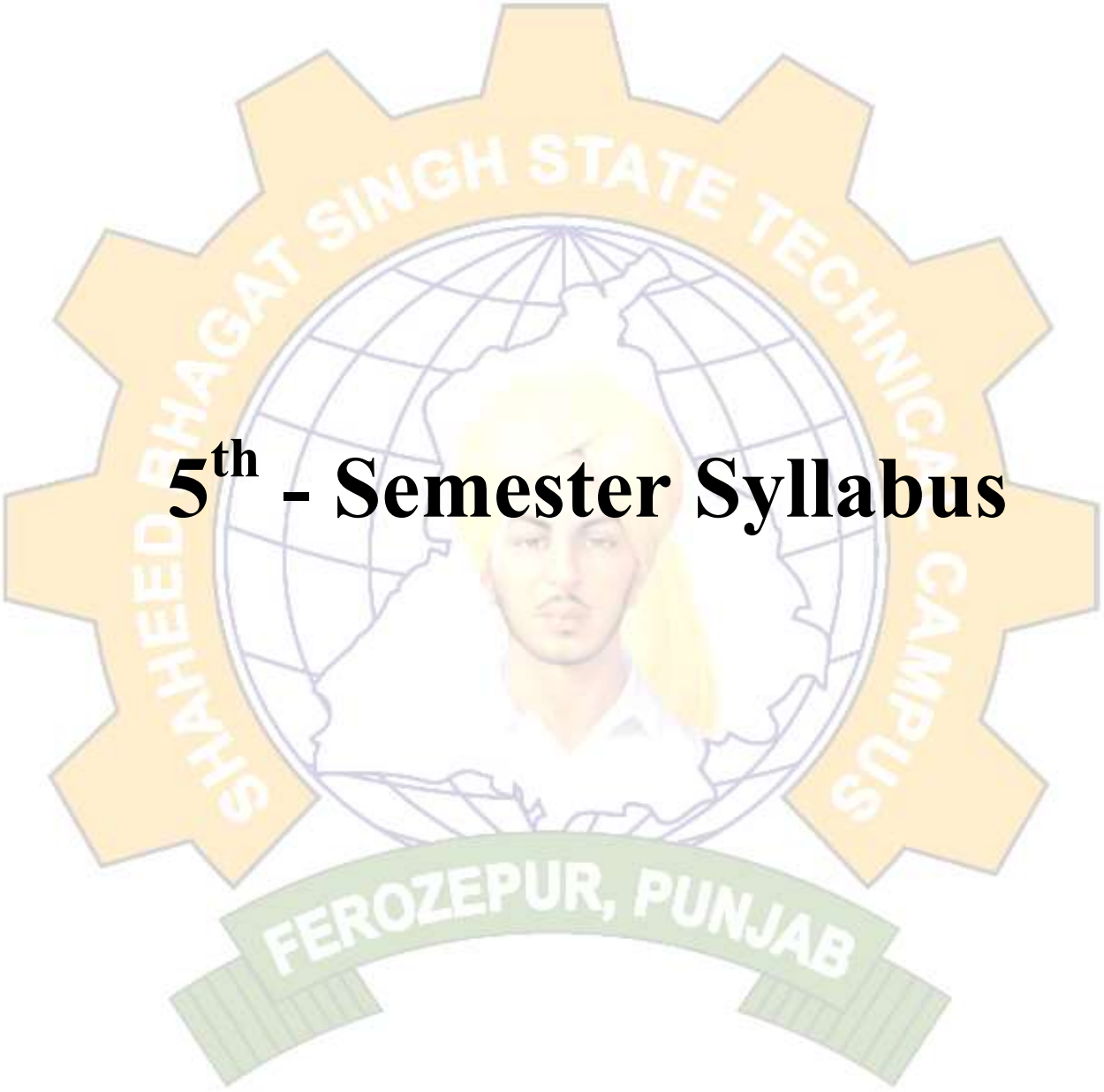
Uni. Exam. Marks - No exam
Sessional Marks - 50
Pattern of Exam. – Internal Viva Voce

OBJECTIVE
To make student explore, study, analyze and understand the contemporary / traditional / historical architectural characteristics and details relevant to the course of study/ syllabi. The duration of tour shall be limited to 05 days.

GENERAL GUIDELINES FOR THE TEACHER

The students will be required to undertake study of buildings/area/ campuses covered during the tour in respect of architectural character / elements, building materials, building technologies used and details through sketches and photographs on individual and group basis, as may be decided by the tour in-charge. Study shall be submitted by student in the form of a report containing sketches, photographs and material collected during study tour, after the conclusion of tour. .

NOTE:
Evaluation of student shall be made through viva-voce conducted on the basis of submission made in the form of Sketches and Tour Report after the conclusion of tour.



5th - Semester Syllabus

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

Uni.Exam.Marks - 120
Sessional Marks - 180
Duration of Exam. – 12 hrs . (Evaluation to be done through viva- voce by external jury)
No. of periods – 8 per week

OBJECTIVES:
- To make students understand and appreciate the constraints of designing buildings with respect to building norms, site conditions for Hilly Areas.
- To understand the importance and role of traditions in evolving architectural character.

OUTCOMES: Student shall be able to understand and appreciate Hilly topography in the Architectural design of a medium scale building with reference to function, form and site.

TOPICS
Design of multi storied residential and commercial buildings upto max. 5 stories integrating architecture, structure, form and building services along with urban context of site
- Hotels, Motels, Restaurants, Hostels, Club Houses etc.
- Institution Buildings, Small Hospital (50 bedded)

INSTRUCTIONS TO THE TEACHER
 Minimum two projects/ assignments to be handled by students individually with one problem from each.
 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.
 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

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 jury appointed by the college and answer sheets should be retained at college level.
 The topic of the project is to be displayed on College / Institute Notice Board ten days in advance.

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-V
(AR - 502)

Uni.Exam.Marks - 60
Sessional Marks - 90
Duration of Exam. – 04 hrs
No. of periods – 05 per week

OBJECTIVES:
To make student study and understand various constructional details of Steel, Aluminium & PVC in co-ordination with study of materials related to them.

OUTCOMES:
Teaching of the subject shall help students to draw the construction details of structural Steel, Aluminium in their uses in various building elements including industrial buildings.

PART A

Steel, Aluminium, and PVC
Doors and windows
Special doors and their detailing like
Sliding and folding
Collapsible
Rolling shutter (curtain lath + curtain rods)
Pivoted

PART B
Partitions (glass bricks, wooden, board), Paneling (board, fiber–sheet, polycarbonate sheet) and false ceiling (gypsum board, Pop, aluminum section, plywood, canvas)
Introduction to partitions for large span structures e.g. convention centre

PART C

Steel Trusses
Steel Trusses
Constructional details of Simple Truss, North Light Truss
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
1. Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
2. Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- 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.
LANDSCAPE ARCHITECTURE- I
(AR- 503)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

OBJECTIVE: To acquaint students with the uses and Importance of landscape design in architecture.

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

TOPICS

PART A
- 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 plants and trees of Punjab.

PART B
Garden styles – formal and informal;
Study on comparative basis of development of landscape design through history:
- Indian Gardens
- Mogul Gardens
- Japanese Gardens
- Italian Gardens
- French Gardens
- English Gardens

PART C
Site Planning: meaning, purpose and methodology; site surveys: types, relevance, components;
Functional and technical factors in site planning; Principles and goals of landscape design; types of landscape styles – hard and soft landscape, wet and dry landscape. Landscape design elements: types, materials, use and relevance. Hard and soft landscape, water as an important element,

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 and scrap book of trees should be made.

GUIDELINES FOR PAPER SETTER
- One compulsory question containing 6 questions of 2 marks (12 marks), each requiring short answers, are to be set from the entire syllabus
- The examiner is required to set another six questions (two from each unit), out of which the students are required to attempt any four questions (selecting at least one from each unit).
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Reid Grant W, “Landscape Graphics”
- Littlewood Michael, “Landscape Detailing”
- Harris and Dines, “Time Saver Standard for Landscape Architecture”- Plants of India
- 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”

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

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

OBJECTIVES:

- 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.
- To develop conceptual and perceptual skills of students to appreciate the basic principles / philosophy of design used in contemporary Indian architecture so as to assess their contributions in modern, regional, cost effective and technological approach towards building.

OUTCOMES: Teaching of the subject shall help students to understand the approach of master architects towards design of buildings in India.

PART A

FOREIGN ARCHITECTS

1. Louis I.Kahn
2. Eerro Sarinen
3. Philip Johnson
4. Paul Rudolph
5. Kenzo Tange
6. I.M. Pie
7. Norman Foster
8. Tadao Ando

PART B

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
7. Laurie Baker
8. Hafeez Contractor

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 containing 6 questions of 2 marks (12 marks), each requiring short answers, are to be set from the entire syllabus
- The examiner is required to set another six questions (three from each unit), out of which the students are required to attempt any four questions (selecting at two from each unit).
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- M.U.Jogelekar -Contemporary Indian Architecture Housing and urban development.
- Global Architecture-Vol.-1,2,3,4.

- Kanvinde A.P. Campus planning in India.
- Moderen Architecture Since 1900.
- Ching, Frank (Francis D.K.), "*Architecture: Form, Space & Order*, Publisher John Wiley, Hoboken 2007
- 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.
- The Frank Lloyd Wright Companion by William Allin Storrer.

B.ARCHITECTURE - V SEM.
BUILDING SERVICES –II
(AR - 505)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

INTENT: To provide the basic understanding of Electrical Layout, Fire Safety and Acoustics for different volumes of buildings

OUTCOMES: Teaching of the subject shall help students to understand the importance and role of Electrical Layouts, Fire Safety and Acoustics in Buildings.

PART A
ELECTRICAL SERVICES

- Electricity- Ohm's , Kirchhoff's Laws and basic Principles.
- Electric Circuits-- Series and Parallel.
- Wires- Specifications /Carrying capacity , Electrical loads.
- Wiring systems- Materials, Types/Methods of wiring, their advantages and disadvantages, safety and precautions.
- Electrical equipment used in buildings; Electrical meters, main switch box, distribution boards, Circuit breakers, fuses etc. and their layout.
- Types of Switches, Sockets and Fixtures.
- Protection against Overload, Short circuit, Earth fault, Lightening and other safety measures for buildings.

PART B
FIRE SAFETY

- Fire—Classification of fire, classification of building according to the fire load, Causes and Spread of fire as per NBC.
- Fire Detection/Warning- Equipment including Smoke Detectors, Monitoring Devices, Alarm Systems. Etc.
- Fire Fighting— Firefighting equipment and types of fire extinguishers.

PART C
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
- Incorporating layouts of relevant services in a multipurpose hall showing Electrical Layout, Fire Safety Plan and Acoustical details.

GUIDELINES FOR PAPER SETTER

- One compulsory question containing 6 questions of 2 marks (12 marks), each requiring short answers, are to be set from the entire syllabus
- The examiner is required to set another six questions (two from each unit), out of which the students are required to attempt any four questions (selecting at least one from each unit).
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

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.
HISTORY OF ARCHITECTURE-IV
(AR - 506)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

OBJECTIVES:

- 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**.**
- To understand the political, social, geological and intellectual influences in Architecture and to study the evolution of city planning through time.
- To inculcate in the students, the importance of the development of world Architecture from Neo classical style up to Industrial revolution and Rajput and Sikh Architecture in India.

OUTCOMES:

- The student shall be able to understand basic chronology of historical development as per the contents of syllabus.
- Students shall be able to acquaint themselves with the key historical buildings of various periods of Architectural history and their characteristic features.

PART A
Neo Classical and Pre Industrial

- Developments and building examples from Italy

Industrial period

- Industrial Revolution and its impact on the development of new towns. e.g. Tony Garnier's Industrial city.
- Influence of new construction materials, industrial techniques and functional needs on building typology and architectural form through building examples.
- Advances in steel construction like the Great Exhibition.
- Development of the high-rise building

Modern Architecture up to Second World War.

PART B
Sikh Architecture

- Introduction to elements of Sikh Architecture with special reference to Gurudwaras, Palaces, Forts & other Secular structure.
- Building Examples: Golden Temple Amritsar, and other prominent structure of Punjab, Khalsa college Amritsar, Gobindgarh Fort, Qila Mubarak Patiala.
- Traditional Planning of Sikh towns

PART C
Colonial Architecture

- Influence of climate and materials on architectural expression.
- Introduction to colonial Architecture and town planning in India with special reference to Planning of New Delhi by Edwin Lutyens.
- Examples of Colonial buildings in Calcutta, Bombay, Madras and New Delhi

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 answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
- Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
- 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:

- 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- IV SEM.
ONSITE CONSTRUCTION TRAINING-I
(AR - 507)

Uni. Exam. Marks - 60
Sessional Marks - 40
Pattern of Exam. – Evaluation to be done through viva- voce by external jury

OBJECTIVES: To make student understand, analyse and appreciate the entire context and intricacies of construction of buildings at site.

OUTCOMES: Students should be able to understand process of planning, progress and management of construction process.

CONTENTS

GUIDELINES FOR TRAINING All the students of the fourth Semester of B. Arch course, after appearing in the annual exam shall be required to undergo on site construction training for a period of five weeks. On Site Training is compulsory and all students shall be required to complete it during the vacation. Training shall be on an actual site/ a live project where construction is already in process. Before completion of the fourth Semester student is required to select the Architect/ Construction Company/ Builder / Developers / Contractor, where he intends to undergo onsite training. The consent, in writing of the concerned shall be obtained prior to going for training and submitted to the Training Co-ordinator appointed by the HOD of the Department of Architecture. Training primarily shall focus on giving student firsthand experience of what actually happens on the site of construction after Architect has prepared and issued the drawings.
During the training students should learn/ understand the following:

- Drawings required for construction
- Planning and management of Construction
- Interpretation of drawings, specifications etc.
- Materials Used along with specification
- Structure and structural drawings
- Services and Service drawings
- Construction Technologies Used
- Interpretation of working drawings at site
- Material and store Management
- Recording of Progress of work
- Machinery and manpower used
- Role of Architect, Client and Contractor
- Anything special and specific to the project related to construction

Evaluation

At the end of the training, student shall be required to submit two copies (one colored and one black and white) of the Reports containing his/her work during training.
Report shall explain, illustrate and showcase the project, brief write up of the project detailing out
scope, site, design and other essential/salient features, diary of what work done during the training, working drawings and details of construction, materials, building technologies, planning and management of construction and manpower, process of managing ,materials, machinery and construction, management of stores and materials, anything special to the project etc. as detailed out in the objectives given above etc.

Report shall be submitted at the start of the next semester and shall be evaluated by an external jury comprising of minimum two experts appointed by the University. The evaluation shall be coordinated by the Training Coordinator who shall also be internal examiner. Student would be required to make a presentation of the report and the work done during training.

Evaluation shall be done in the start of this semester and made on the basis of work done, understanding developed, learning made, recording of various aspects of construction etc in the following manner:

i. Attendance- 15 % marks
ii. Progress Record by Training Co-ordinator- 15 %
iii. Evaluation made by Site In-charge -20%
iv. Report- Contents and Quality by External/Internal Experts- 30%
v. Presentation made and Viva- Voce by External Experts- 20%

NOTE: One faculty member shall be appointed as Training Co-ordinator who shall be responsible for managing the entire context of training. Before proceeding for the OST, students shall be briefed by the Training coordinator about the manner they should undergo training at site in order to understand, analyze and appreciate the entire context and intricacies of construction of buildings.

B.ARCHITECTURE - V SEM.
ADVANCE BUILDING MATERIALS
(AR- 508)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 02 per week

OBJECTIVE: To acquaint students with the constituents, properties, types, available market forms of Building Materials.

OUTCOMES: To make students understand the use and importance Building Materials and their applications in Architecture.

TOPICS

PART A

- The study of constituents, properties and uses of Mortar, Lime Mortar, Cement Mortar, Surkhi and Mud Mortar.
- Water proofing:- Water proofing materials(liquid, semi liquid and solid) – Composition, Properties , Applications.
- Surface Finishes - White wash, Distemper, Paints and Varnishes- Types, Applications, Suitability, Advantages and Disadvantages, Plastering and Pointing.

PART B

- Iron and Steel –Study of composition of Cast iron, Steel and Wrought Iron with properties and uses in buildings
- 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.
- 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.

PART C

- 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.
- Commercial Timber- Manufacturing process and qualities of Decorative and Commercial Veneers including Plywood, Particleboard, Fibreboard, Gypsum board, Batten board, Rice husk board, and Bamboo board.
- Sustainable Building Materials- Constituents, Properties, Uses such as flyash bricks, AAC Blocks, Cement Blocks etc.

TEACHING METHODOLOGY

- Teaching shall be imparted through a combination of lectures by subject experts, visits to the market for studying available forms of the materials.
- Continuous evaluation shall be made of students work based on assignments and Market surveys should be conducted.

GUIDELINES FOR PAPER SETTER

- One compulsory question containing 6 questions of 2 marks (12 marks), each requiring short answers, are to be set from the entire syllabus
- The examiner is required to set another six questions (two from each unit), out of which the students are required to attempt any four questions (selecting at least one from each unit).
- Question paper is to be set covering entire syllabus by making parts and mixing the topics.

REFERENCE BOOKS:

- Engineering materials Rangwala
- Building Construction Punmia, B.C

6th Semester Syllabus

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

Uni.Exam.Marks - 120
Sessional Marks - 180
Duration of Exam. – 12 hrs (Evaluation to be done through viva- voce by external jury)
No. of periods – 12 per week

OBJECTIVES:
- To make students understand the principles and approach to the designing of complexes in the context of urban design, environmental components and urban services.
- To understand the constraints of designing recreational buildings in an urban or rural setting with respect to socio-cultural, climate and development norms.
- To emphasize the role of design in evolving expression. To focus on design detail as vital part of architectural expression.
- To understand design limitations due to site surroundings and local bye laws.
- To explore computer aided presentation techniques involving 2D and 3D drawings and models as required.

OUTCOMES:
- Students should be able to understand and appreciate the constraints of combining varying structural spans in complex building typologies and interweaving them with structure, site and architectural form and expressions.
- Students should be able understand and appreciate the interrelationship between form and scale.

TOPICS
The design program to include:
a) Residential School and Tourist Resorts
b) Housing Clusters of flats and residential complexes at an intermediate scale such as staff housing, housing for specific communities in urban and rural areas such as home for the aged, etc.
c) Design of mixed use and large span structures such as Art and crafts centres, Performing arts centre, Cultural centre, Museum and exhibition centre in urban areas, etc.

METHODOLOGY
For all assignments the following methodology should be followed and all stages should be attempted individually.
- Library and Proto type Studies
- Site analysis and site planning
- Space planning
- Design development and volumetric studies (model)
- Preliminary design and volumetric study (model)
- Final design with detailed volumetric study, (Detailed model) and visual communications (3D Visualizations)

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 jury appointed by the college.
 Answer sheets should be retained at college level for the viva voce examination.
 The topic of the project is to be displayed on College / Institute Notice Board ten days in advance.

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
 Julius Panero, Martin Zelnik, ‘Human Dimension and Interior Space’, Whitney Library of Design, **1975.**

- Joseph De Chiara, Julius Panero, Martin Zelnik, 'Time Saver Standards for Interior Design and Space Planning', McGraw Hill, **2001**.
- Ernst Neuferts, 'Architects Data', Blackwell, **2002.**
- Ramsey et al, 'Architectural Graphic Standards', Wiley, **2000.**
- Sam F. Miller, 'Design Process: A Primer for Architectural and Interior Design', Van Nostrand Reinhold, **1995.**
- Rewal, Raj, 'Humane Habitat at Low Cost', Architectural Research Cell, **2000**.
- Steele, James, 'The Complete Works of Balakrishna Doshi: Rethinking Modernism for the Developing World', Super Book House, Mumbai, **1990**.

B.ARCHITECTURE - VI SEM.
BUILDING CONSTRUCTION-VI
(AR- 602)

Uni.Exam.Marks - 80
Sessional Marks - 120
Duration of Exam. – 04 hrs .
No. of periods – 05 per week

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

OUTCOMES: The student shall be able to draw the drawing good for construction.

PART A
Working Drawings of a residential unit incorporating the following details:
- Demarcation plan
- Foundation details
- Working/ dimensions at all floor levels.
- Terrace plan
- Elevations/ Sections
- Joinery Details
- Toilet Details
- Kitchen Details
- Staircase Details
- Electrical Plan
- Plumbing/ sanitary layout

PART B
Temporary construction work
Form work/shuttering (Pneumatic)
Shoring
Underpinning
Scaffolding

PART C
Cupboards, cabinets, counters and showcase/Display windows
Construction details of an interior like office, showroom, etc. incorporating the above details.
Various type of wall cladding
a. Glass wall with patch fittings
b. Aluminum Composite panels
c. Stone (Red sand stone/slates/granite/marble)
d. Tile (brick/ vitrified) Grit block finish

TEACHING METHODOLOGY
 Site visits to construction sites
Market study of the products available under different trade names with details of their manufacture, specification and performance.

GUIDELINES FOR PAPER SETTER
 The examiner is required to set a total of six questions with two questions from each Unit.
 Students are required to attempt Three Questions with One question from each Unit.

REFERENCES BOOKS:

 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.ARCHIECTURE-VI SEM.
INTERIOR DESIGN- I
(AR - 603)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

OBJECTIVES:
- To introduce the students to the basic principles of Interior Design in the context of built environment.
- To introduce the students to the discipline of Interior Design and to develop basic skills required for handling simple interior design projects.

OUTCOMES: Student shall be able to understand and appreciate the discipline of Interior design and its relation with Architectural Design.

PART A
- Objectives, Purpose, Role and Importance of Interior Design
- Elements of Interior Design, Role in interiors. **Enclosing Elements:** Introduction to various elements in interiors like floors, ceiling walls, staircases, opening, etc. Use of materials and various methods of their treatment to obtain certain specific, functional, aesthetic and psychological effects. Other elements of interiors like accessories used for enhancement of interiors – paintings, objects de art, furnishing i.e. shades, blends, curtains etc.
- Aesthetic Order, functional Value and Psychological impact of various elements of Interior Design
- Principles of Interior Design and their application in the context of buildings

PART B
- Application of Colour, Texture, Landscaping, Artificial and Natural Lighting in the Building interiors
- Furniture, Furnishings, Fabrics, Murals, Paintings, Sculpture, Lighting Fixtures, Floor coverings, Wall coverings and related materials
- Study of furniture and ergonomics

PART C
Design exercises with simple spatial layouts of furniture, wall panelling, flooring, illumination, ceiling details and air conditioning features in buildings.

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

Note: Studio exercises shall be supplemented with workshops and site-visits.

GUIDELINES FOR PAPER SETTER
One compulsory question of short answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
 Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
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:

 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.
ESTIMATING, COSTING & SPECIFICATIONS-I
(AR - 604)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

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

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

TOPICS:

PART A
Definition, scope and importance of specification in the building activities, Art of writing specifications of material and construction works along with emphasis on the quality of the materials and proper sequence of construction works, method of writing correct order and sequence of use of materials. Use of standard specifications drafted by CPWD, PWD etc. Writing detailed specification for various building materials. Various test and properties related like bricks, Concrete, Cement, lime, sand, various types of mortars, timber, glass, etc.

PART B
Writing detailed specification for various construction works like earthwork for foundations, Brickwork, R.B. work, R.C.C. work, plastering and pointing, various types of flooring, white washing, distempering and painting, roof terracing, stone masonry.
Introduction to Estimates, types of estimate approximate and detailed methods of approximate estimating, plinth area methods, carpet floor area method, cubic content methods, approximate content method and number system.

PART C
Use of Microsoft Excel for estimating detailed estimate, procedure of estimating, taking out quantities, bill of quantities, schedule of rates.
Exercise in estimation of small buildings, Rate Analysis: Principles and analysis of different rate of labour and material, exercises in rate analysis of different building works i.e. Earth work for foundation, flooring. Introduction to P.W.D accounts procedure as per Common Schedule of Rates.

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 answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
 Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
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:
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
(AR - 605)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. - 3 hrs
No. of periods – 03 per week

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

OUTCOMES: Student will be able to understand the Legal Framework in Architectural Practice.

PART A
- Architectural Legislation – Introduction, Need, Role and Importance.
- Punjab Municipal bye-laws – Introduction, Contents related to Site planning, architectural design and services.
- PUDA bye-laws – Introduction, Contents related to Site planning, architectural design and services.

PART B
- Development Controls, need, importance, typologies
- Development Controls – Chandigarh Capital City
- Submission Drawings - Documents, Drawings and procedure for approval.
- Completion/ Occupation Certificate for Buildings - Documents, Drawings and procedure
- Chandigarh Periphery Control Act- Intent, Content and important provisions.

PART C
- National Building Code - Definitions, architectural controls, zoning, parking etc.
- National Building Code – Provisions related to multi-storied buildings.
- Disability Act
- Preservation and Conservation of Heritage Buildings, Heritage Regulations

GUIDELINES FOR PAPER SETTER
- One compulsory question of short answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
- Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
- 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:-

- Building Bye Laws- Chandigarh Administration
- Building Bye Laws- PUDA
- Municipal Building Bye Laws
- Town Planning – Rangwala
- National Building Code
- Readers Volume in Town planning by Institute of Town Planners, INDIA

B.ARCHITECTURE – VI SEM.
BUILDING SERVICES-III
(AR - 606)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

OBJECTIVES:
- To develop an understanding of the advanced building services such as HVAC, lifts, escalators, Building automation systems, BIM and their application in the design proposals of multi-storeyed buildings.
- The thrust shall be on understanding the use and application of the services and not the calculation or numerical part.

OUTCOMES: Student shall be able to understand the use and application of various advanced building services for the design assignments.

PART A
HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS
- 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

PART B
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.

PART C
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 answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
- Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
- 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:.

- 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.
FUNDAMENTALS OF SUSTAINABLE ARCHITECTURE
(AR - 607)

Uni.Exam.Marks - 60
Sessional Marks - 40
Duration of Exam. – 03 hrs
No. of periods – 03 per week

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

OUTCOMES: Students will learn about the sustainable practices to be adopted during practical work.

PART A
- 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

PART B
- Sustainable Materials – Production and use
- Quality of indoor/outdoor environment
- Sustainable Design – Concept, Objectives, Principles, Approach to Sustainable design
- Built Environment- Sustainable Construction, Ecological Buildings, Green Building

PART C
- 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 answers type containing 6 questions of 2 marks each (12 Marks) is to be set from the entire syllabus
- Two questions are to be set from each part, out of each part & only one question is to be attempted by the candidate.
- 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
- Energy Efficient Buildings in India:- TERI

B.ARCHITECTURE- VI SEM.
STUDY TOUR
(AR - 608)

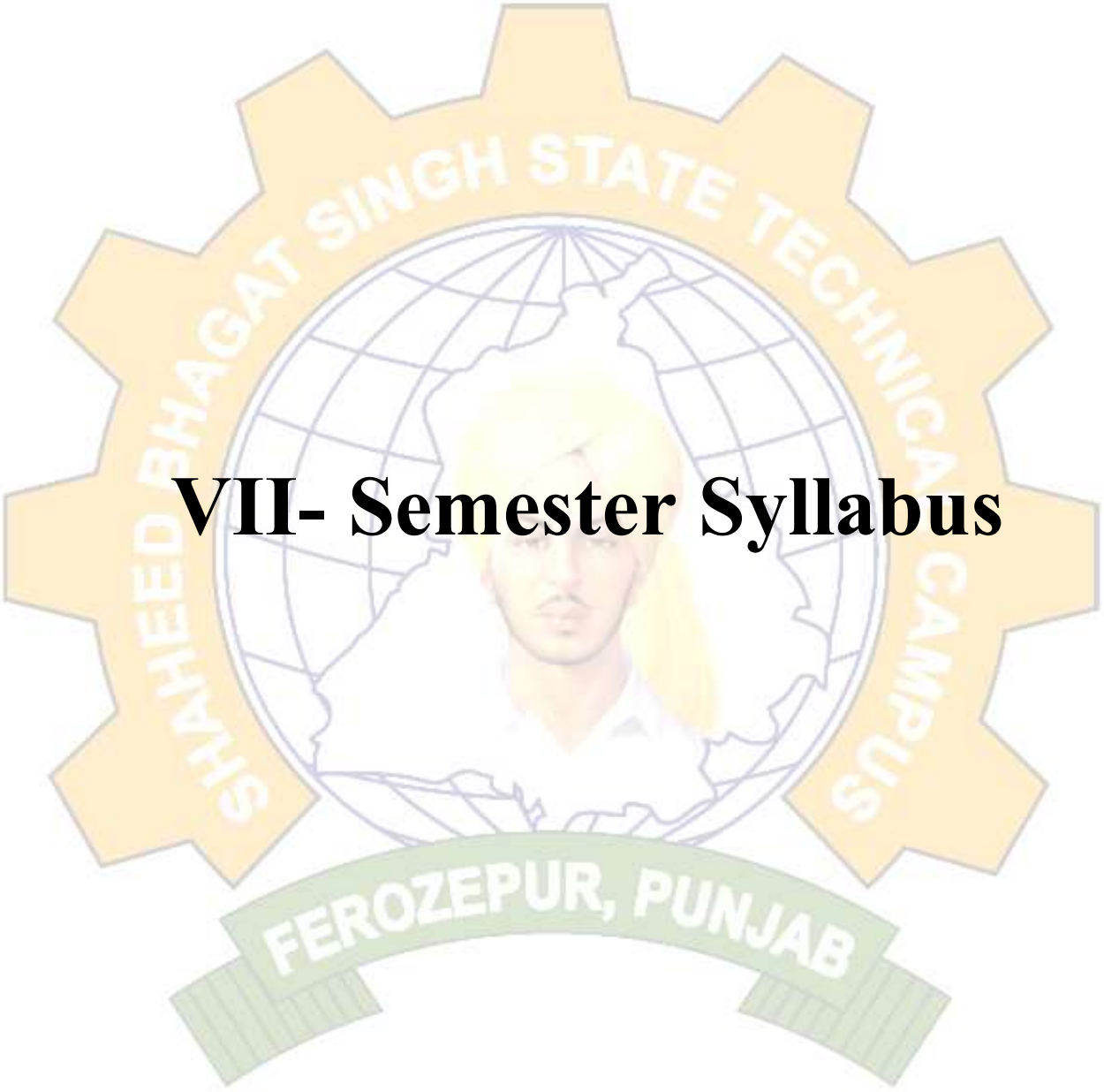
Uni. Exam. Marks - No exam
Sessional Marks - 50
Pattern of Exam. – Internal Viva Voce

OBJECTIVE
To make student explore, study, analyze and understand the contemporary / traditional / historical architectural characteristics and details relevant to the course of study/ syllabus. The duration of tour shall be limited to 10 days.

GENERAL GUIDELINES FOR THE TEACHER

The students will be required to undertake study of buildings/area/ campuses covered during the tour in respect of architectural character / elements, building materials, building technologies used and details through sketches and photographs on individual and group basis, as may be decided by the tour in-charge. Study shall be submitted by student in the form of a report containing sketches, photographs and material collected during study tour, after the conclusion of tour.

NOTE:
Evaluation of student shall be made through viva-voce conducted on the basis of submission made in the form of Sketches and Tour Report after the conclusion of tour.



VII- Semester Syllabus

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

Uni. Exam. Marks - 150
Sessional Marks - 350
Duration of Training - 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 Director/COE / Principal.

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 Principal)

c) **Marks awarded by the employer -50**
   (To be sent in original to the Director/COE / Principal)

 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

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

Uni.Exam.Marks - 100 (No exam, only viva-voce by external jury)
Sessional Marks - 200

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 Director/COE/ Principal 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
(AR-802)

Uni.Exam.Marks - 50
Sessional Marks - 50
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 prefabrication.
 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
(AR-803)

Uni.Exam.Marks - 50
Sessional Marks - 50
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 perspectiveGreek, 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
(AR-804)

Uni.Exam.Marks - 50
Sessional Marks - 50
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
(AR-805)

Uni.Exam.Marks - 50
Sessional Marks - 50
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
(AR-806-E/L)

Uni.Exam.Marks - 50
Sessional Marks - 50
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
(AR-807-E/L)

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

INTENT

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

CONTENTS

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
(AR-808-E/L)

Uni.Exam.Marks - 50
Sessional Marks - 50
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.

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IX - Semester Syllabus

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

Uni.Exam.Marks – 100 (No exam, only viva-voce by external jury)
Sessional Marks - 200

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 Director/coe/ Principal 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
(AR-902)

Uni.Exam.Marks - 50
Sessional Marks - 50
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
(AR-903)

Uni.Exam.Marks - 50
Sessional Marks - 50
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 Neighbourhood
 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
(AR-904)

Uni.Exam.Marks - 50
Sessional Marks - 50
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)
(AR-905)

Uni.Exam.Marks - 50
Sessional Marks - 50
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
(AR-906 E/L)

Uni.Exam.Marks - 50
Sessional Marks - 50
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
(AR-907-E/L)

Uni.Exam.Marks - 50
Sessional Marks - 50
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
(AR-908-E/L)

Uni.Exam.Marks - 50
Sessional Marks - 50
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

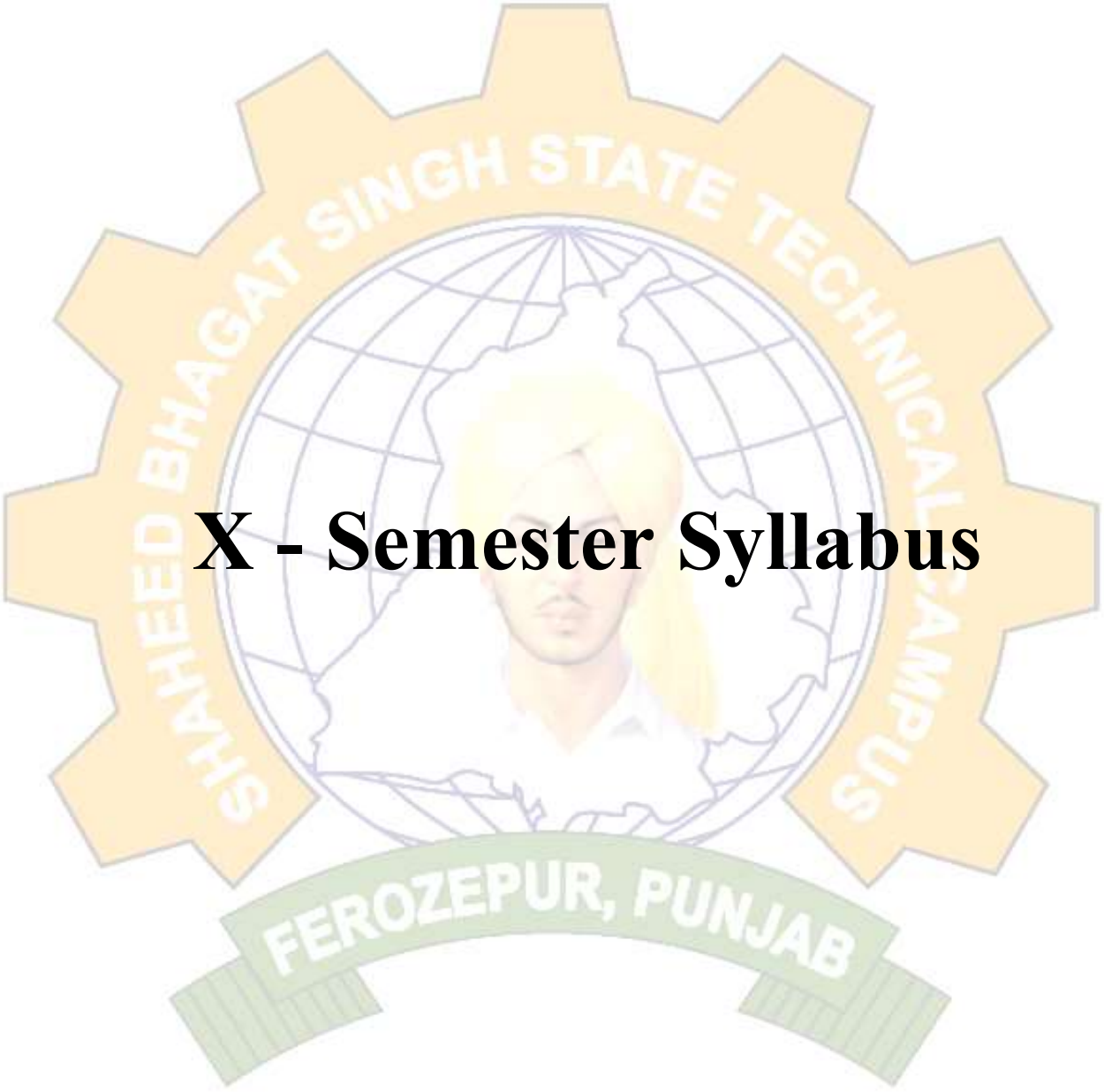
 Teaching shall be imparted through a combination of lectures by subject experts, visits to the historical gardens developed over the period, landscape projects of repute, study of native and other trees etc Continuous evaluation shall be made of students work based on assignments and sketching.

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

B.ARCHITECTURE – X SEM.
ARCHITECTURAL DESIGN -IX (THESIS PROJECT)
(AR-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/	2 weeks	30 Additional Library studies
(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.	5 week	50 (Incorporating improvements suggested in Rough Report, Design Criteria and explanatory Sketches of Evolution of Design)
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 Department/COE/ Principal.

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

Uni.Exam.Marks - 50
Sessional Marks - 50
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
(AR -1003)

Uni.Exam.Marks - 50
Sessional Marks - 50
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, "Professional Practice"
 Apte V S, "Professional Practice & Management"

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

Uni.Exam.Marks - 50
Sessional Marks - 50
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.