




**SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS
FEROZEPUR**

Ref. No.: SBS/FZR/ODA/708

Dated: 15/10/2016

NOTIFICATION

Teaching scheme and syllabus for the discipline of B.Tech, B. Arch, MBA, MCA and BCA (3rd Sem Onwards) for the students admitted in the year 2015 stands approved in the 6th Academic Council of the institute wide agenda item no. 6.16. The approved teaching scheme and syllabus are available on the institute website


Director 19/10/16
MS

Endst. No.

Dated:

A copy of the above is forwarded to the following for information and necessary action.

1. Mr. Amardeep Chopra to upload the teaching scheme and syllabus attached herewith on the institute website.
2. Registrar
3. Dr Tejeet Singh, Member Secretary Academic Council
4. PA to Director

SCHOOL OF ARCHITECTURE

SYLLABUS

FOR

B. ARCHITECTURE (SEMESTER: I, II, III and IV)



SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

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

STUDY SCHEME OF ARCHITECTURAL ENGINEERING

1 st Semester											
	S. No	Course Code	Course Title	Credits	L	T	S	P	Internal	External	Total Marks
Core Subjects	1	AR-101	Architectural Design -I	6	1	0	5	0	120	80	200
	2	AR-102	Building Construction-I	4	1	0	3	0	90	60	150
Allied Subjects	3	AR-103	Architectural Drawing–I	4	1	0	3	0	90	60	150
	4	AR-104	Architectural Graphics-I	3	1	0	2	0	60	40	100
	5	AR-105	Structure System-I	3	2	1	0	0	60	40	100
	6	AR-106	Building Science- I (Materials)	3	2	1	0	0	40	60	100
	7	AR-107	Workshop-I	1	0	0	0	2	50	----	50
	8	BTHU-101	Communicative English	3	3	0	0	0	40	60	100
Total				27	11	2	13	2	550	400	950

Note: Compulsory one week workshop for Human Values

2 nd Semester											
	S. No	Course Code	Course Title	Credits	L	T	S	P	Internal	External	Total Marks
Core Subjects	1	AR-201	Architectural Design-II (*)	6	1	0	5	0	120	80	200
	2	AR-202	Building Construction-II	4	1	0	3	0	90	60	150
Allied Subjects	3	AR-203	Architectural Drawing–II	4	1	0	3	0	90	60	150
	4	AR-204	Architectural Graphics-II	3	1	0	2	0	60	40	100
	5	AR-205	Structure Design-I	3	2	1	0	0	40	60	100
	6	AR-206	Theory of Design – I	3	2	1	0	0	40	60	100
	7	AR-207	History of Architecture-I	3	3	0	0	0	40	60	100
	8	AR-208	Workshop-II	1	0	0	0	2	50	----	50
	9	AR-209	Project Oriented Study Tour	0	0	0	0	0	50	----	50
	10	AR-210	General Fitness - I	0	0	0	0	0	100	----	100
Total				27	11	2	13	2	680	420	1100

(*)Note: Evaluation will be through external jury

3rd Semester											
	S. No	Course Code	Course Title	Credits	L	T	S	P	Internal	External	Total Marks
Core Subjects	1	AR-301	Architectural Design-III (*)	7	2	0	5	0	120	80	200
	2	AR-302	Building Construction-III	5	1	0	4	0	90	60	150
Allied Subjects	3	AR-303	History of Architecture-II	3	3	0	0	0	40	60	100
	4	AR-304	Climate and Architecture	3	2	1	0	0	40	60	100
	5	AR-305	Structure Design-II	3	2	1	0	0	40	60	100
	6	AR-306	Building Science-II(Geology)	3	2	1	0	0	40	60	100
	7	AR-307	Surveying and Leveling	3	2	1	0	0	40	60	100
	8	AR-308	Computer Applications-I (*)	1	0	0	0	3	40	60	100
Total				28	14	4	9	3	450	500	950

(*)Note: Evaluation will be through external jury

4th Semester											
	S. No	Course Code	Course Title	Credits	L	T	S	P	Internal	External	Total Marks
Core Subjects	1	AR-401	Architectural Design-IV (*)	7	2	0	5	0	120	80	200
	2	AR-402	Building Construction-IV	5	1	0	4	0	90	60	150
Allied Subjects	3	AR-403	Theory of Design-II	3	2	1	0	0	40	60	100
	4	AR-404	Structure Design-III	3	2	1	0	0	40	60	100
	5	AR-405	Building Services-I	3	2	1	0	0	40	60	100
	6	AR-406	History of Architecture-III	3	3	0	0	0	40	60	100
	7	AR-407	Computer Applications-II (*)	1	0	0	0	3	40	60	100
	8	AR-408	Project Oriented Study Tour	2	0	0	0	0	50	---	50
	9	AR-409	Practical Training-I (*)	3	0	0	0	0	40	60	100
Total				30	12	3	9	3	600	500	1100

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 semester.

I Semester Syllabus – 2015

**B.ARCHITECTURE-1ST 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-1ST 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-1ST 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-1ST 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 Jacqueline, 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-Coordinate 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
Building Construction

Rangwala
Punmia, B.C.

**B.ARCHITECTURE-1ST 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

Objective/s 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

II Semester Syllabus - 2015

**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.; Building Construction . 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 Vadodra, Ahmedabad, Ajanta – Ellora, Bombay, Pune, Goa, Delhi.

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.