

IK Gujral Punjab Technical University
Bachelor of Architecture (B. Arch. 1st Semester)

Course Code	Course Name	1l, 5 st	Int. : Ext.	Duration of Exam
UC-BARCH101-19	Architectural Design & Theory – 1	Credits - 06	60:40	06 Hours

Course Objective

The main objective of the course is to get the students interested in and to familiarize them with the basic concepts of Design. To enhance and promote visualization, expressional skills and sensitivity to surrounding environment and to develop the ability to translate principle of design into architecture solution.

Course Outcomes: At the end of the course, the students will able to -

1. Understand & will gain a fundamental knowledge of architecture design and its basic principles.
2. To apply visual and formal analysis of architecture in their mind and they will be able to appreciate well-designed buildings.
3. Understand the skill required to interpret a work of architecture and to evaluate, identify and analyse artistic expression of architectural forms.
4. Understand the relationship between human activities of Space.

Detailed Syllabus:-

UNIT-I (Theory)

- Introduction to Basic Design
- Objectives of Design
- Elements of Design
- Principles of Design
- Scale and proportion in Architecture.
- Anthropometrics (including norms for physically challenged persons)
- Human functions and their interactions for space requirements.
- Minimum and optimum areas for various human activities & functions.

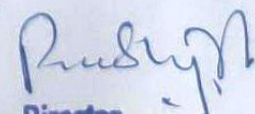
UNIT-II (Design Exercise & Application)

- 2D compositions with basic geometric shapes, colour, texture and pattern.
- Floor tile design, carpet, mural, door paving patterns, Sky line of city/village
- Experience in 3D Design, compositions with simple forms like cube, cuboids, cylinder, cone, prism etc.
- Compositions with 3-D Solids.
Note - Stress is given to 2D, 3D exercise (Black & white and colours.)
- Functional furniture layout, circulation as anthropometric/Activity pattern

UNIT-III

- Security check post/ rain shelter/ Bus stop/ Milk booth/ park layout etc...




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Evaluation Criteria for Exam / Question Paper Setting:-

The examiner will set five questions from Unit- I and two from Unit-III & students are required to attempt any three question from Unit-I and only one from Unit-III during the six hour examination. No question to be set from Unit- II

Important Note - The evaluation is to be done through Viva - voce conducted at the institute level by Internal / External jury members appointed in consultation with the university from the appointed panel list of examiners.

The answer sheet shall be retained at the institute after the exam for the viva voce.

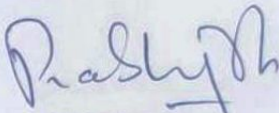
Instructions for the Faculty – Design faculty should encourage and motivate the students for live projects of their immediate surrounding. (Identifying need, Framing requirements and solution for the same and it should be marked as an assignment.)

The stress should be given on making students grasp the concept and do the design assignment as a creative fun activity.

Core References:

The assigned Faculty is required to provide updated references/E-resources related to the content of the subject by ensuring the availability of the same in the department library, on web portals/online i.e. E-learning. The Faculty is also advised to keep on updating the reference list and submit the latest one in the Library & Academic department of the Campus.




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IK Gujral Punjab Technical University

Bachelor of Architecture (B. Arch. 1st Semester)

Course Code	Course Name	L - 1, ST - 3	Int. : Ext.	Duration of Exam
UC-BARCH102-19	Architectural Drawing -I	Credits - 04	60:40	03 Hours

Course Objective

The objective is to make the students familiarize with good drafting and lettering techniques use in architecture. To gain the basic knowledge for preparing the architectural drawings by learning about the orthographic projections of simple geometric forms and representation of 3-D & 2-D forms.

Course Outcomes: At the end of the course, the students will able to –

- Gain the comprehensive understanding of the fundamental techniques of technical drawing and its architectural representation.
- Attain the knowledge to visualize the geometrical forms through plans, elevations and sections.

Detailed Syllabus

UNIT-I

- Drafting – Technique & its Principles
- Line - Types of Lines and Dimensioning of line
- Lettering - free hand & block lettering
- Scales – Different types of scale and its uses in the Architectural Drawing.

UNIT-II

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

UNIT-III

- Section of Solids- Cube, Cuboids, Cone, Cylinder, Pyramid, Prism etc.

UNIT-IV

- Development of Surfaces - Simple Geometrical Solids (Cube, Cuboids, Cone, Cylinder, Pyramid, Prism etc.)
- Interpenetration of Solids

Instructions for the Faculty:

Emphasis should be laid on learning by doing and students have to be encouraged to make proper models to understand the geometry of forms.

Evaluation Criteria for Exam / Question Paper Setting:-

Total eight questions are to be set (two questions from each unit) and the students are required to attempt total four questions (one from each unit).

Core References:

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Bachelor of Architecture (B. Arch. 1st Semester)

Course Code	Course Name	L - 1, ST - 2	Int. : Ext.	Duration of Exam
UC-BARCH103-19	Architectural Graphics -I	Credits - 03	60:40	03 Hours

Course Objective

The objective is to make the students familiar with visual arts and its basic principles and to explore the potential of Pencil of different grades and Coloured pencils as a powerful tool of Graphic Communication.

Course Outcomes: At the end of the course, the students will able to –

- Gain a fundamental knowledge of architecture Graphics and its principles.
- Achieved a comprehensive understanding of architectural presentation techniques.

Detailed Syllabus

UNIT- I (Pencil as fundamental tool of drawing)

- Free hand line-work with different strokes/grades in pencil.
- Effect of light and shade on simple geometrical solids.
- Textures of different building materials (such as bricks, stones, grass, glass, timber etc.) in pencil through shading and surface finishes of wall and floor.
- B/W Composition by using different geometric forms with charcoal pencil.

UNIT- II (Pencil as presentation medium)

- Freehand (proportionate) sketching of human figures, different types of vegetation, different transport modes and buildings etc.
- Indoor and outdoor furniture/antique items & Staircase-shading/role with light
- Sketches of scenes and activities from memory involving public spaces, markets, festivals, recreational spaces etc.
- Live sketching – indoor and outdoor area

UNIT-III (Rendering with coloured pencils/crayons/dry pastels)

- Colour rendering of human figures, different types of vegetation, different transport modes and buildings etc.
- Colour Rendering of various scenes such as Garden/Park Scene, Street Scene, Lake Scene, Village/Market Scene, etc.
- Live sketching – indoor and outdoor area
- Role of light in rendering co-relation with different shapes of geometry and some building elements.

UNIT-IV (Art & Illusion)

- Different exercises involving Logo Design, Collage making etc.
- Mural and Sculpture design in different materials like PoP, Clay, ceramic/Mosaic etc.

Instructions for the Faculty:

- Workshops related to pencil rendering will also be organised, highlighting its technique and style which can be organised indoor or outdoor. The students must be encouraged to appreciate the natural/man-made landscape and to understand the interrelationship of nature and architecture.

Evaluation Criteria for Exam / Question Paper Setting:-

Total four questions are to be set from all the units and students are required to attempt all the questions.

Core References:

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IK Gujral Punjab Technical University
Bachelor of Architecture (B. Arch. 1st Semester)

Course Code	Course Name	L, S/T, P/FW, ST	Credits	Duration of Exam
UC-BTHU102-18	Communicative Skill Laboratory	2 - P	1	Viva- Voce

Course Objective

The objective of the course is to help the students become the independent users of English language.

Course Outcomes: At the end of the course, the students will able to –

1. Students will acquire basic proficiency in listening and speaking skills.
2. Students will be able to understand spoken English language, particularly the language of their chosen technical field.
3. They will be able to converse fluently
4. They will be able to produce on their own clear and coherent texts.

Detailed Syllabus:-

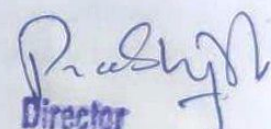
Interactive practice sessions in Language Lab on Oral Communication

- Listening Comprehension
- Self-Introduction, Group Discussion and Role Play
- Common Everyday Situations: Conversations and Dialogues
- Communication at Workplace
- Interviews
- Formal Presentations

Core References:

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IK Gujral Punjab Technical University
Bachelor of Architecture (B. Arch. 2nd Semester)

Course Code	Course Name	L-1, Stu-5	Int. : Ext	Duration of Exam
UC/BARCH-201/19	Architectural Design - II	Credits - 6	60:40	06 Hours+ Ext viva-voce

Course Objective

Understand the Architectural design of a small building with reference to function, form and structures.

Course Outcomes - At the end of the course, the students will be able to:

Develop a basic understanding of function, form, structure in the design of small structure. Understand & gain a fundamental knowledge of architecture design process and its principles.

Detailed Syllabus

UNIT-I

Design of small buildings - Security check post , Milk booths, Cafes, Canopy etc. (involving circulation, form structure, and function)

UNIT-II

Architect's Office, Doctor's Clinic, Lawyer office & such similar projects of small scale (Cycle stand, E-Rickshaw stand, Taxi stand & Parking layouts, etc.)

Minimum 2 -5 exercises to be taken. (01 major, 02 minor and 02 as time problem)

NOTE - All buildings should have accessibility to the physically challenged persons as per SC guidelines.

Instructions for the Faculty –

- 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.
- Stress should be given to new thoughts/ innovation in design.

Design faculty should encourage and motivate the students for live projects of their immediate surroundings.


Evaluation Criteria for Examination/ Question Paper Setting:

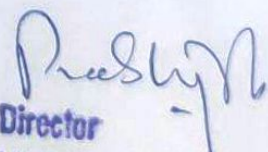
One compulsory question is to be set from the entire syllabus.

The answer sheet shall be retained at the institute after the exam for conduct of the viva voce which will be conducted at the institute level by Internal / External jury members appointed in consultation with the university from the approved panel list of examiners.

Core References:

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Bachelor of Architecture (B. Arch. 2nd Semester)

Course Code	Course Name	L-1, ST-3, Credits - 4	Int. :Ext. 60:40	Duration of Exam 03 Hours
UC-BARCH202-19	Architectural Drawing - II			

Course Objective

To make students learn the techniques to represent different objects through 3-D and developing skill for visualization of 3-D forms through isometric/axonometric views, perspective and sciography to enhance the designing skills.

Course Outcomes- At the end of the course, the students will be able to:

- Understand the fundamental techniques of technical drawing used in 3-D.
- Analyse the 3-dimensional drawings of the building with Sciography.

Detailed Syllabus

UNIT-I (Isometric/ Axonometric projections)

- Principle of Isometric projection, Isometric grid and Scale.
- Isometric /Axonometric Views of simple/complex forms.
- Fundamentals of Sciography (point, line, plane, solids etc.)
- Sciography in Plans and Elevations
- Sciography in Isometric/Axonometric Views

UNIT – II (Perspective Drawing)

- Introduction to theory of Geometrical Perspective Drawing.
- Perspective by Side Elevation Method.
- Angular (Two Point Perspective) and Parallel (One Point Perspective)
- Perspective of different Solids and Building elements
- Perspective by Grid Point method and Measuring Line method.
- Sciography in Perspectives (both one point & two point perspectives)

Instructions for the Faculty

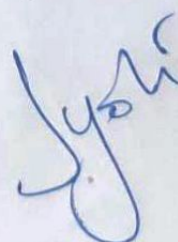
- The Faculty is required to give maximum examples of the perspective view to enable the students to draw the views by using thumb rules.
- Emphasis should be laid on learning by doing and students have to be encouraged to make proper models to understand the geometry of forms.

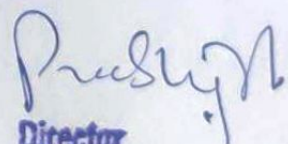
Evaluation Criteria for Examination/ Question Paper Setting:

Total four questions are to be set two from each unit & students are required to attempt total two questions i.e. one from each unit. The distribution of marks for unit I: Unit II is 15: 25 marks

Core References:

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Bachelor of Architecture (B. Arch. 2nd Semester)

Course Code	Course Name	L-1 ,ST-2	Int. : Ext.	Duration of Exam
UC-BARCH203-19	Architectural Graphics - II	Credits-3	60 : 40	03 Hours

Course Objective

The objective of the course in Architectural Graphics is to make the students familiar with the basic potential of Pencil and colours as a powerful tool of Graphic Communication.

Course Outcomes - At the end of the course, the students will be able to:

- Gain a fundamental knowledge of architecture Graphics and its principles.
- Attain the knowledge about the role of colours in presentation drawing and rendering techniques used in architectural design.

Detailed Syllabus

UNIT- I (Colours as an effective presentation tool and its use in architecture design)

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

UNIT- II (Crayons, Oil Pastels and water colour as presentation medium)

- Representation of different textures in colour (brick, stone, timber, marble, glass etc.)
- Outdoor/indoor sketching of buildings, huts, group of trees, different kinds of trees/shrubs/grass with varying foliage in colours
- Colour rendering of blocks/geometrical forms, human figures, different types of vegetation, different transport modes and buildings etc.
- Rendering of drawings (Plan, elevation, 3-D views) in oil pastels and water coloured medium from previous semester design problem.

Instructions for the Faculty

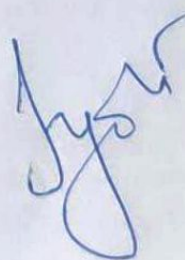
- Workshops related to colour rendering will also be organised, highlighting its technique and style which can be organised indoor or outdoor. The students must be encouraged to appreciate the natural/man-made landscape and to understand the interrelationship of nature and architecture.

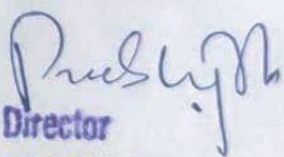
Evaluation Criteria for Examination/ Question Paper Setting:

Total four questions are to be set one from each unit & students are required to attempt all the questions.

Core References:

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IK Gujral Punjab Technical University

Bachelor of Architecture (B. Arch. 2nd Semester)

Course Code	Course Name	L-1, ST-4, Credits-5	Int. :Ext. 60:40	Duration of Exam 03 Hours
UC-BARCH205-19	Building Construction & Materials - II			

Course Objective

The main objective is to introduce the properties of timber as building materials and to familiarize the students with traditional construction methods of a single storeyed building in timber with sloping roofs.

Course Outcomes: At the end of the course, the students will be able to-

- Comprehend timber as a building material and its application in building components and Gain knowledge on construction of Door, window, roof made out of it.
- Understand various surface finishes for single storey building and the fundamental knowledge for water proofing details in simple structures.

Detailed Syllabus (This subject consists of twoParts)

Part A: Building Materials

UNIT-I (Materials)

- Timber: Sources of timber, its classification & characteristics, defects of Timber, different Preservation and treatment measures and Uses of Timber in building construction.
- Industrial timber products and their applications-plywood, particleboard, laminated board, block board and batten board etc.

UNIT – II (Foundation & D.P.C)

- Foundation – Introduction and Importance of foundations, Types of Foundations (brick and stone) and their design considerations for load bearing structures.
- Damp proof course – introduction and types of D.P.C. , laying and maintenance of D.P.C. layers
- 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.

Part B: Building Construction

UNIT – III (Doors & Windows)

- Carpentry joints - Introduction to Joints in Carpentry,
- Doors -Types of Doors, Design and construction details of Framed, Ledged, Braced & Battened Door, Flush Door, and Wire mesh Door, Panelled Door etc. (considering different types of Joints and Joinery details)
- Windows - Types of Windows, Design and Construction details of Casement, Bay, Clearstory, Corner window Dormer window etc. (considering different types of Joints and Joinery details)

UNIT – IV (Foundation, Walls and Roofs)

- Roofs - Construction of R.B.C. roof, Jack Arch Roof, Tiled and Battened Roof and concepts of water proofing & Thermal Insulation of roofs.
- Walls- various types of timber frame walls with details of joints and cladding
- Dhajji wall construction
- Foundation of timber post

NOTE: Draw the section through a single storey building covering the foundation, D.P.C. layer, window with sill and lintel level, roof and wall junction, roof insulations and parapet wall details.

Instructions to the Faculty

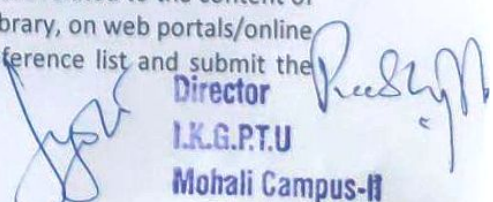
- The faculty should encourage the students to visit the construction site/conduct market survey w.r.t. the topics covered in the class.
- Audio-visual lectures should be presented.

Evaluation Criteria for Examination/ Question Paper Setting:

Total eight questions are to be set two from each unit & students are required to attempt total four questions i.e. one from each unit. The distribution of marks for **Part A** (Unit I&II): **Part B** (Unit III&IV) is 12: 28 marks.

Core References:

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