

Uttarakhand Tech. University, Dehradun
Faculty of Architecture

B.ARCH. (First Year) Semester – I
AR – 101 Architectural Design – I

Schedule of Teaching and Examination –							Examination Duration	
L	P/TV	ST	TOTAL	S	T	P/V	TOTAL	6 Hours
2	-	5	7	100	100	50	250	

OBJECTIVES

Orientation of students to the professional of architecture and basic design

CONTENTS

Orientation to the Architecture profession	- A general survey of the changes in habitat in history. Architects act, C.O.A. I.I.A., NASA. Art, Architecture and Architectural Design
Space and Architecture	- Understanding design as to create for a particular purpose and architectural design as to create space – exercise in terms of simple drawing and surroundings. Form created through lines (columns) and planes (volumes), combination there of.
Form and Transformations	- Additive, dimensional, subtractive – exercises primarily through 3 D models of simple geometrics.
Scale in Architecture	- Simple measurement exercises.
Order in Architecture	- Geometrical, structural, dimensional, material, spatial- through observation of surroundings as well as simple exercises in 2D and 3D. Exercises in order and transformations of form and space.

APPROACH

- Drawing and model making skills will be taught along the subject to improve the abilities to understand space and form.
- Ref. books.

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B. ARCH. (First Year) SEMESTER – I
AR – 102 CONSTRUCTION AND MATERIALS – I

Schedule of Teaching and Examination						Examination Duration		
L	P/TV	ST	TOTAL	S	T	P/V	TOTAL	
1	-	5	6	100	50	50	250	3Hours

OBJECTIVES

- To familiarize the students with constituents, properties and uses of traditional building materials and their use in construction.

1. Materials

Clay and Clay Products	:	Mud including stabilized earth, Burnt Bricks, Brick Tiles, Brick Ballest and Surkhi.
Stone	:	Classification, Availability, Characteristics and Uses.
Lime	:	Availability, Preparation and Uses.
Cement	:	Manufacture and Properties.
Send and Surkhi	:	Characteristics, Availability and Uses.
Mortar	:	Mud, Lime, Cement.
Concrete	:	Lime, Cement.
D.P.C.	:	Asphalt, Bitumen, Synthetic.

2. Construction :

Element of Building	:	Terminology, nomenclature of various parts of building from foundation to roof.
Brick Work	:	Brick Terminology, Simple Bonds in Brick work. Details at junctions and Quoins.
Stone Work	:	Elementary Stone Masonry, Types of joints.
Foundation	:	Need, Design criteria. Foundation concrete. Details of simple Spread Foundations for load bearing walls of various thickness
D.P.C.	:	Introduction to Horizontal D.P.C.

APPROACH

- The students would be familiarized with vernacular terminology as prevalent in this part of the country.
- The emphasis will be constructed details as applicable to Indian conditions,
- Site visits and market surveys will be an integral part of sessional work.
- Ref. books

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B. ARCH. (First Year) SEMESTER – I
AR – 103 ARCHITECTURAL STRUCTURES – I

Schedule of Teaching and Examination							Examination Duration	
L	P/TV	ST	TOTAL	S	T	P/V	TOTAL	
2	1	-	3	50	50	-	100	3Hours

OBJECTIVES

- To understand the basic principles of structural mechanics, so that it forms the basic for study of structural design and behaviour of various structural elements.

CONTENTS

Simple stresses and Stains	:	Elasticity, stress, strain, types of stresses, Elastic limit, Hook's Law, Modulus of Elasticity, Stresses in Composite Bars. Primary or Linear strain, Poison's ratio, shear stress, Principal stresses and strains.
Centre of Gravity	:	Definition, Methods of finding out C.G. of simple figures, Centre of parallel forces.
Moment of Inertia	:	Definitions, important theorems, section modulus, Calculation of M.I. by first principles and its application, M.I. of Composite sections.
Elements of Static	:	Law of parallelogram of forces, Resolution of a force, Law of triangular of forces, Polygon of forces, Theorem of resolved parts, resultant of number of concurrent coplanar forces Conditions of equilibrium, moment of a force, Moment and arm of a couple, Theorems on couples.
Shearing force and Bending Moments	:	Beams, Shearing force and bending moment, Moment of resistance. S.F. and B.M. diagrams of simple cases.

APPROACH

- The lectures by the experts in the field will be arranged for the students so as to give them exposure to the practical aspects of design and site visits.
- Ref. books.

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B. ARCH. (First Year) SEMESTER – I
AR – 104 ARCHITECTURAL DRAWING– I

Schedule of Teaching and Examination							Examination Duration	
L	P/TV	ST	TOTAL	S	T	P/V	TOTAL	
2	-	5	7	100	100	-	200	3Hours

OBJECTIVES

- Familiarization with drawing tools and accessories; with its uses.
- To give a basic knowledge of good drafting and lettering techniques.
- To develop comprehension and visualization of geometrical forms.

CONTENTS

Drawing tools and Accessories	:	Introduction to the subject and drawing equipment. Setting of drawing equipment. B.I.S./code of practice for architectural designs. Drafting and quality of lines with pencil.
Basic technical drawing	:	Concept and types of line. Division of lines and angles. Drawing polygons. Inscribing and circumscribing circles in polygons. Drawing geometrical curves helix,
Orthographic Projections	:	Definition, meaning and concept. Planes of Projections. First angle projections. Projection of regular rectilinear and circular solids (prisms, pyramids, cones, cylinders, spheres etc.) in different positions. Sections of regular rectilinear and circular solids (prisms, pyramids, cones, cylinders, spheres etc.) in varying conditions of sectional plane.
Development of Surfaces	:	Types and uses of scales. Scales used by an architect. Reducing and enlarging scales
Lettering	:	Free hand and mechanical lettering.

APPROACH

- Maximum drafting work will be done in the studio.
- Models of solids will be used as teaching aids.
- Exercises for each topic will be undertaken.
- Ref. book.

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B. ARCH. (First Year) SEMESTER – I
AR – 105 ARTS AND GRAPICS – I

Schedule of Teaching and Examination							Examination Duration	
L	P/TV	ST	TOTAL	S	T	P/V	TOTAL	
1	-	5	6	50	50	-	100	3Hours

OBJECTIVES

- Introduction to art and appreciation of art and its philosophies.
- Familiarization with principles, theories and graphics with architectural composition.
- Development of art and graphic skills.

CONTENTS

Philosophy of Art	:	Relevance of art of life : Art and artist, Art and society, Art and religion, Art and mysticism. Appreciation of art : Painting, Sculpture and Architecture. Art in architecture : psychological and emotional aspect of aesthetics.
Theory of Design (Introduction to Graphic Composition) Art and Graphic Skills	:	Elements of Design – Line, Direction, Shape size and form, Texture, Colour. Exercise to develop free hand skills-drawing lines, joining points, drawing curves, comprehension of scale. Still life drawing – from observation. Drawing from nature-shrubs, trees, grass, plats, flowers, rocks, water.

APPROACH

- The theory part of the course will be an overview, covered through audiovisual lectures delivered by experts in the field.
- Studio exercises of graphic composition will be in the form of drawings, collapses and models.
- The students would be taught to handle various mediums in studio – work as part of development of art and graphics skills.
- The examination paper would so set so as to test the knowledge and understanding of the student for each district part of the syllabus.

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B. ARCH. (First Year) SEMESTER – I
AR – 106 ARCHITECTURAL WORKSHOP- I

Schedule of Teaching and Examination							Examination Duration	
LP/TV	ST	TOTAL	S	T	P/V	TOTAL		
1	-	-	1	50	50	-	50	3Hours

OBJECTIVES

- To develop skills in understanding the complexities and constrains of brick masonry and joinery in carpentry.
- To familiarize the student with the basic skills of photography for use in architectural work..
- To familiarize the student with the use of various materials for model making.

CONTENTS

Workshop	:	Relevance of art of life : Art and artist, Art and society, Art and religion, Art and mysticism. Appreciation of art : Painting, Sculpture and Architecture. Art in architecture : psychological and emotio nal aspect of aesthetics.
Photography	:	Creative composition in photography and its role in documentation and creative design process. Construction of simple – 3 dimensional form and preparing of detail models of architectural forms in different materials

APPROACH

- Most of the assignments shall be done in the college workshop.
- Laboratory demonstration of developing and printing of Black and White photographs.
- Ref. books.

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B. ARCH. (First Year) SEMESTER – I
AR – 107 COMMUNICATION TECHNIQUES

Schedule of Teaching and Examination							Examination Duration	
LP/TV	ST	TOTAL	S	T	P/V	TOTAL		
1	-	-	1	50	-	-	50	3Hours

OBJECTIVES

- To development in students communicative, writing and presentation skills .
- To enable them to record, report analyzes, evaluate and understand architecture, both in its theoretical and practical form.

CONTENTS

Revision	: Sentence, Phrase, clause and parts of speech: noun-gender, number case; pronoun-personal' reflexive, emphatic, demonstrative, indefinite, distributive, reciprocal; adjective; article; preposition; conjunction and interjection.
Words and Idioms	: Vocabulary, work building and word formation, phrases and idioms, proverbs, reading a dictionary, using a thesaurus.
Composition and Comprehension	Essay, story and letter writing. Summarizing, comprehension-unseen passages.
Architectural Journalism	Recording/Collecting material writing pertaining to events / activities. Writing reports on design projects / buildings/ complexes.

APPROACH

- The grammatical parts of writing to focus on communicative rather than structural aspects..
- The students shall be exposed to works of professional art and architecture critics such as Vikram Bhatt, Vincent Scully, Gautam Bhatia etc.
- Various forms of architectural journalism shall be studies from magazines and journals.
- Ref. books.

