

DEPARTMENT OF ARCHITECTURE ASSISTANTSHIP
DR. B. R. AMBEDKAR GOVT. POLYTECHNIC AMBOTA , DISTT UNA H.P.

LESSON PLAN

Programme Name	Architecture Assistantship
Subject Name	Arch. Graphics & Design
Subject Code	ARPC103
Semester	First
Subject Teacher name	Ar. Rajeev Bhardwaj

Evaluation Scheme

S. No.	Subject Name	Study Scheme (Hrs/Week)	Marks In Evaluation Scheme					
			Internal Assesment			External Assesment		
			Th.	Pr.	Total	Th.	Pr.	Total
1	Arch. Graphics & Design	3 (Th)	50		50	100		100
Reference Books		Engineering Drawing: Plane and Solid Geometry Author: Bhatt, N.D. and Panchal V. M, Charotar Publishers Building Drawing: with an integrated approach to build environment Author: Shah, M.G., Kale, C.M. and Patki, S.Y.						

Course Outcome

CO-I	Recall the basic instruments, tools, and conventions used in architectural drawing and drafting.
CO-II	Explain the principles of orthographic projection, dimensioning, and standard architectural drawing practices
CO-III	Construct freehand and instrument-based architectural drawings including plans, elevations, and sections.
CO-IV	Examine drawings for accuracy, scale compliance, and adherence to BIS standards.

Teaching Plan

Unit No.	Name Of Topic	Month	Proposed Date	Actual Date	Remarks
Unit-I	Importance of freehand drawing in architecture: Line quality, Human figures (basic proportions);	August	5,7,8		
	Drawing instruments and materials; Standard sizes of drawing sheets; Layout of sheets and title block;		12,14		
	Types of lines and applications; Dimensioning: principles and methods; BIS standards: aligned and unidirectional system.		19,21,22		
	Plane Geometry: Construction of basic geometrical figures (Circle, Square, Triangle, Rectangle);		26,28,29		
Unit -II	Inscription of circles in polygons (Pentagon, Hexagon) Scales and their applications in Architecture. (Numeric Scale & Graphical Scale).	Sept.	2,3,5		
	Orthographic Projection: Principles of projection,		9,11		
	Front view and top view; First angle projection.		16,17,19		
	Simple projection of solids (cube, prism, cylinder)		23,25,26,30		
	Isometric Drawing: Principles of isometric projection		3,7		
Unit -III & IV	Box method for isometric drawing; Simple objects and building components.	Oct.	9,10,14		
	Perspective Drawing: One-point perspective of any simple geometrical object, Two-point perspective of any simple geometrical object, Simple interior and exterior views		16,17,21		
	Rendering & Presentation in black and white or colour in any medium		23,24,28		
	Study of light, shade, and shadow; Textures, tones, and colours;		30,31		

Unit -IV & V	Manual rendering techniques; Introduction to digital rendering tools.	Nov.	4,6,7		
	Drawing work: Measured drawing of building elements and simple building forms		11,13		
	Drawing work: Measured drawing of building elements and simple building forms		18,20,21		
	Drawing work: Measured drawing of building elements and simple building forms		25,27,28		

Assignments/ Submissions:-

Assignment/ Submission	Contents Of Syllabus Covered		Proposed Date	Actual Date	Remarks
A-1	Unit-I & Unit -II		19-09-2026		
A-2	Unit-III		28-10-2026		
A-3	Unit-IV		20-11-2026		

House Test/ Class Test

Name Of Test	Syllabus Fot Test	Proposed Date	Actual Date	Remarks
Class Test -I	Unit-I	11-09-2026		
Class Test -II	Unit-II & Unit -III	14-10-2026		
House Test	Unit -I to Unit-IV	Nov Ist Week		

Sign Of Teacher

Approved

Sign Of H.O.D.

Principal

DR. B. R. Ambedkar Govt Polytechnic
Ambota Distt Una H.P.

Department of Architecture									
LESSON PLAN									
Program Name		Architecture Assistantship							
Subject Name		BUILDING MATERIAL							
Subject Code		ARBS101							
Semester		First							
Subject Teacher Name		Rajinder Kumar							
Evaluation Scheme									
Sr. No	Subject Name	Study scheme		Marks in Evaluation Scheme					
		(Hrs/Week)		Internal Assessment			External Assessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1	Building Services	3	-	50	-	50	100	-	100
Reference Books		Engineering Materials Author: SC Rangwala, Charotra Publishing House, Anand Building materials Author: B C Punia							
Course Outcomes (COs)									
CO – 1	Recall the classification, properties, and uses of common building materials including brick, cement, timber, steel, and glass.								
CO – 2	Differentiate between traditional and contemporary building materials in terms of sustainability, cost, and performance.								
Teaching Plan									
Chapters	Name of Topic					Proposed Date	Actual Date	Remarks	
UNIT-I Natural Building Materials	Study of the physical properties, varieties, and application of natural materials					10-08-2026			
	Bricks: Composition of earth, manufacturing process					11-08-2026			
	types (First class, Second class, Fly ash), and structural bonding.					12-08-2026			
	Stones: Geological classification, characteristics of Granite, Marble					17-08-2026			
	Slate, and Sandstone; quarrying and dressing techniques.					18-08-2026			
	Timber: Structure of wood, seasoning methods, defects,					19-08-2026			
	various industrial timber products (Laminates, Plywood, Blockboards, Veneers).					24-08-2026			
	various industrial timber products (Laminates, Plywood, Blockboards, Veneers).					25-08-2026			
UNIT-II Man-made and Industrial Materials	Analysis of materials manufactured for modern architectural requirements.					26-08-2026			
	Metals: Architectural uses of Ferrous (Steel, Cast Iron)					31-08-2026			
	Non-ferrous (Aluminum and Copper) metals.					01-09-2026			
	Glass: Manufacturing and types of glass					02-09-2026			
	Glass: Manufacturing and types of glass					07-09-2026			
	Class Test-I					08-09-2026			
	Sheet, Plate, Tempered, Laminated, Tinted					09-09-2026			
	Sheet, Plate, Tempered, Laminated, Tinted					14-09-2026			
	and their glazing applications.					15-09-2026			
	and their glazing applications.					16-09-2026			
	Steel: Structural steel sections,					21-09-2026			
	Steel: Structural steel sections,					22-09-2026			
	TMT bars,					23-09-2026			
	their role in contemporary reinforced concrete and steel structures					28-09-2026			
	their role in contemporary reinforced concrete and steel structures					29-09-2026			
UNIT-III Finishing Materials	Application of materials for aesthetic purpose					30-09-2026			
	protective purposes in contemporary buildings					05-10-2026			
	Interior Finishes: Plasters					06-10-2026			
	Class Test-II					07-10-2026			
	POP, Wallpapers, and flooring materials					12-10-2026			
	Paints and Varnishes					13-10-2026			
	Paints and Varnishes					14-10-2026			
	Composition, types (Oil, Enamel, Emulsion, Distemper),					19-10-2026			
	Composition, types (Oil, Enamel, Emulsion, Distemper),					21-10-2026			
	application methods					27-10-2026			
UNIT-IV Environmental Impact and Human Comfort	application methods					28-10-2026			
	House Test					02-11-2026			
	House Test					03-11-2026			
	The science of design and material behaviour under varying climatic conditions					04-11-2026			
	Climatic Effects					09-11-2026			
	Impact of Sun (thermal expansion), Rain (seepage/efflorescence)					10-11-2026			
	Wind (erosion) on material durability					11-11-2026			
	Human Comfort: Selecting materials					16-11-2026			
	create effective indoor environments					17-11-2026			
	create effective indoor environments					18-11-2026			
passive cooling/heating strategies					23-11-2026				
passive cooling/heating strategies					25-11-2026				


Sig. of Teacher


Sig. of H.O.D.

Dr. B. R. Ambedkar Govt. Polytechnic Ambota
Distt. – Una (H.P.)

LESSON PLAN

Program Name	Architecture
Subject Name	Mathematics
Subject Code	ARBS103
Semester	I st
Subject Teacher Name	Sandeep Kumar

Evaluation Scheme

Sr. No.	Subject Name	Study scheme (Hrs/Week)		Marks in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	T	Th	Pr	Total	Th	Pr	Total
1.	Mathematics	4	1	50	-	50	100	-	100
Reference Books		(i) B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, New Delhi, 40th Edition, 2007							
		(ii) S.S. Sabharwal, Sunita Jain, Eagle Parkashan, Applied Mathematics, Vol. I & II, Jalandhar.							

Course Outcomes (COs)

CO – 1	Recall fundamental concepts of algebra, geometry, and trigonometry relevant to architectural calculations.
CO – 2	Interpret geometric relationships and spatial measurements applicable to building design and construction.
CO – 3	Calculate areas, volumes, loads, and other quantities encountered in architectural and structural contexts.

Teaching Plan

	Name of Topic	Proposed Date	Actual Date	Remarks
UNIT-1 Matrices and Determinants	Matrices, algebra of matrices,	10/08/2026		
	type of matrices, determinants and matrices of order two and three.	11/08/2026 13/08/2026		
	evaluation of determinants, area of triangles using determinants:	14/08/2026 17/08/2026		
	Adjoint and inverse of a square matrix:	18/08/2026 20/08/2026		
	Cramer's rule for solving two variables and three	21/08/2026 24/08/2026		



	variables linear equations,			
	matrix inverse method to solve a system of linear equations in two and three variables.	25/08/2026 27/08/2026		
UNIT-II	Important formulae of Differentiation.	28/08/2026		
Limits and Derivatives	Rules for Differentiation,	31/08/2026		
	Differentiation of sum, product and quotient of functions.	01/09/2026		
	Applications of derivatives:	03/09/2026		
	rate of change, increasing/decreasing functions.	07/09/2026		
	tangents & normal, maxima and minima.	08/09/2026		
	Class Test-1 (As per HPTSB schedule)	10/09/2026		
UNIT-III	Integration as inverse process of differentiation.	11/09/2026 14/09/2026 15/09/2026		
	Simple integration by substitution	17/09/2026 18/09/2026 21/09/2026		
	by parts and by partial fractions (for linear factors only)	22/09/2026 24/09/2026 25/09/2026 28/09/2026		
	Evaluation of definite integrals.	29/09/2026 01/10/20026 05/10/2026 06/10/2026		
	Class Test-2 (As per HPTSB schedule)	08/10/2026		
UNIT-IV	Vectors and scalars, types of vectors,	09/10/2026		
Vector Algebra and Trigonometry	magnitude and direction of a vector.	12/10/2026 13/10/2026		
	Direction cosines/ratios of vectors.	15/10/2026		

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Assignments

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1& Unit-2	05/09/2026		
A-2	Unit-3& Unit-4	09/10/2026		
A-3	Unit-5	06/11/2026		

House Test/Class Test

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
Class Test -1	Unit-1& Unit-2	As per HPTSB Academic Schedule		
Class Test -2	Unit-3			
House Test -1	Unit-1, Unit-2, Unit-3 and Unit-4			


(Signature of Teacher)


(Signature of HOD)

Department of Applied Sciences & Humanities
Dr. B. R. Ambedkar Govt. Polytechnic Ambota
Distt. – Una (H.P.)

LESSON PLAN

Program Name	Architecture Assistantship
Subject Name	Applied Sciences
Subject Code	ARBS 105(Physics Part A +Chemistry Part B)
Semester	1 st
Subject Teacher Name	Pritam Singh Dogra/Swati Bhardwaj

Evaluation Scheme

Sr. No.	SubjectName	StudyScheme (Hrs/Week)		MarksinEvaluationScheme					
				InternalAssessment			ExternalAssessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1.	Physics (Part A) +Chemistry(Part B)	2 +2	-	50	-	50	100	-	100
Reference Books		1. Building materials S. K. Duggal							
		2. Text book of Physics for Class XI, NCERT							
		3. Text book of Chemistry for class XI & XII (Part- I & Part -II)							
		4. Chemistry for Engineering Author: Agnihotri, Rajesh .							

Course Out comes (COs)

CO-1	Apply fundamental material behavior and heat transfer to understand building stability, material performance and thermal comfort in architectural design.
CO-2	Explain how scientific principles govern building performance in terms of thermal comfort, daylighting, and acoustics
CO-3	Utilize concepts of light, illumination and acoustics to enhance visual and auditory comfort in building spaces through appropriate design strategies.

Teaching Plan

Physics (Part A)

	Name of Topic	Proposed Date	Actual Date	Remarks
UNIT-1 Basic Mechanics in Buildings Measurement	Definition and types of forces	12/08/2026		
	Resolution of forces into two component forms	13/08/2026		
	Linear momentum, Impulse	19/08/2026		
	Conservation of linear momentum	20/08/2026		
	Four forces in nature (Gravitational, Electromagnetic, weak and strong forces).	27/08/2026		
UNIT-II Building Materials and Thermal Effects	Elastic and plastic behaviour of materials (conceptual).	02/09/2026		
	Strength, durability, and basic material properties	03/09/2026		
	ClassTest-1(As per HPTSB – Schedule)	09/09/2026		
	Thermal expansion (linear expansion) and contraction	10/09/2026		
	Effects of temperature on building materials.	16/09/2026		
	Introduction to behaviour of concrete, steel, and glass	17/09/2026		

Unit III Work, Power and Energy	Definition of work, power, energy and their Units	23/09/2026		
	Work energy theorem	24/09/2026		
	Simple numerical problems	30/09/2026		
UNIT-IV Optics	Nature of light: wave and ray concept (basic understanding)	01/10/2026		
	Laws of reflection, Plane and curved mirrors (conceptual applications)	07/10/2026		
	Class test - 2	08/10/2026		
	Refraction of light and refractive index, electromagnetic spectrum Total internal reflection (concept and applications)	24/09/2026 14/10/2026		
	Transmission of light through different materials (glass, water, air)	09/10/2026 15/10/2026		
	Optical properties of materials: reflection, Absorption, transmission.	21/10/2026		
UNIT-V Sound and Acoustics	Nature of sound and its propagation, Basic properties of sound	28/10/2026		
	House Test	02/11/2026 to 04/11/2026		
	frequency, wavelength, intensity, Reflection of sound	12/11/2026		
	Echo and reverberation, Reverberation time (concept only)	19/11/2026		
	Sound absorption and absorbing materials	26/11/2026		

Assignments:

Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Unit-1 & 2(Physics) & Unit-1,2(Chemistry)	03/09/2026, 03/10/2026		
A-2	Unit-3 & 4(Physics) & Unit-3,4(Chemistry)	07/10/2026, 11/11/2026		

House Test / Class Test

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
ClassTest-1	30% of the Syllabus	08/09/2026		
ClassTest-2	Next 30% of the Syllabus	13/10/2026		
HouseTest-1	80% of the Syllabus	1st Week of November, 2026		

Signature of Teacher

(Swati Bhardwaj)

Signature of HOD

Dr. B.R. Ambedkar Govt. Polytechnic Ambota Una (H.P.)

Department of in Architecture Assistantship

LESSON PLAN

Program Name	Diploma in Architecture Assistantship
Course Title	Basics of Computer & AI in Architecture
Course Code	ARSE101
Course Co-ordinator Name	Sushil Kumar Rana

CO No.	Bloom's Level	Course Outcome Statement	PO Mapped	PSO Mapped
CO 1	L1 – Remember	Recall the basic components, terminology, and functions of computer hardware and software relevant to architectural practice.	PO 1, PO 4, PO 7	PSO 2, PSO 4
CO 2	L2 – Understand	Explain the role and applications of Artificial Intelligence tools in architectural design, visualization, and documentation.	PO 1, PO 2, PO 4, PO 7	PSO 2, PSO 3, PSO 4
CO 3	L3 – Apply	Use basic computer applications and introductory AI-based design or rendering tools to support simple architectural tasks.	PO 1, PO 2, PO 3, PO 4, PO 6, PO 7	PSO 1, PSO 2, PSO 4
CO 4	L4 – Analyse	Examine the advantages and limitations of AI-assisted tools compared to conventional methods of architectural drafting and design.	PO 1, PO 2, PO 3, PO 4, PO 7	PSO 1, PSO 2, PSO 3, PSO 4

Department of Architecture
Dr. B.R. Ambedkar Govt. Polytechnic Ambota
Distt. Una (H.P.) -177205

LESSON PLAN

Program Name	Architecture Assistantship
Subject Name	Architecture Workshop - I (Carpentry)
Subject Code	ARPC105
Semester	First
Subject Teacher Name	Mr. Tek Singh
Evaluation Scheme	

Sr. No.	Subject Name	Study Scheme		Marks in Evaluation Scheme				Total
		Hrs/Week		Internal Assessment		External Assessment		
		Th.	Pr.	Th.	Pr.	Th.	Pr.	
1	Carpentry Workshop	0	4	0	50	0	100	150

Course Outcomes (Cos) : After completing the course, students will be able to

CO-1 Identify and use basic carpentry tools safely and effectively in workshop settings.

CO-2 Construct simple joinery details and its application in architectural elements.

Teaching Plan

Chapter	Name of the Topic		Proposed date	Actual date	Remarks
UNIT-I	Introduction to Carpentry Workshop	Group-II	13-08-2026		
	Introduction to Carpentry Workshop	Group-I	20-08-2026		
	Types of Carpentry tools	Group-II	22-08-2026		
	Types of Carpentry tools	Group-I	27-08-2026		
	Safety precautions in Workshop	Group-II	29-08-2026		
	Safety precautions in Workshop	Group-I	03-09-2026		
	Basic Wood properties & types	Group-II	05-09-2026		
	Basic Wood properties & types	Group-I	10-09-2026		
	Identification & handling of tools for Marking, Cutting & Finishing	Group-II	17-09-2026		
	Identification & handling of tools for Marking, Cutting & Finishing	Group-I	19-09-2026		
	Types of Wood Joints	Group-II	24-09-2026		
UNIT-II	Types of Wood Joints	Group-I	26-09-2026		
	Techniques of cutting & assembling joints	Group-II	01-10-2026		
	Techniques of cutting & assembling joints	Group-I	03-10-2026		
	Finishing & Polishing	Group-II	08-10-2026		
	Finishing & Polishing	Group-I	15-10-2026		
	Preparation of Simple Butt Joint	Group-II	17-10-2026		
	Preparation of Simple Butt Joint	Group-I	22-10-2026		
	Preparation of Simple Butt Joint	Group-II	24-10-2026		

Department of Architecture

Dr. B.R. Ambedkar Govt. Polytechnic Ambota

Distt. Una (H.P.) -177205

LESSON PLAN

Program Name	Architecture Assistantship
Subject Name	Architecture Workshop - I (Model Making)
Subject Code	ARPC105
Semester	First
Subject Teacher Name	Ms. Urvashi Sharma

Evaluation Scheme

Sr. No.	Subject Name	Study Scheme		Marks in Evaluation Scheme				Total
		Hrs/Week		Internal Assessment		External Assessment		
		Th.	Pr.	Th.	Pr.	Th.	Pr.	
1	Model Making	0	4	0	50	0	100	150

Course Outcomes (Cos) : After completing the course, students will be able to

CO-1 Prepare block & detailed models using appropriate materials & techniques.

CO-2 Visualize & represent architectural ideas in three dimensions through physical models.

Teaching Plan

Chapter	Name of the Topic		Proposed date	Actual date	Remarks
UNIT-I	Introduction to Model Making	Group-I	13-08-2026		
	Introduction to Model Making	Group-II	20-08-2026		
	Importance of Model Making & types of Models	Group-I	22-08-2026		
	Importance of Model Making & types of Models	Group-II	27-08-2026		
	Introduction to Model Making materials	Group-I	29-08-2026		
	Introduction to Model Making materials	Group-II	03-09-2026		
	Basic tools & equipments used in Model Making	Group-I	05-09-2026		
	Basic tools & equipments used in Model Making	Group-II	10-09-2026		
	Cutting, Joining & finishing techniques	Group-I	17-09-2026		
	Cutting, Joining & finishing techniques	Group-II	19-09-2026		
	Safety precautions & handling tools	Group-I	24-09-2026		
	Safety precautions & handling tools	Group-II	26-09-2026		

UNIT-II

Techniques for preparation of Block Models	Group-I	01-10-2026		
Techniques for preparation of Block Models	Group-II	03-10-2026		
Understandig scale & proportion in models	Group-I	08-10-2026		
Understandig scale & proportion in models	Group-II	15-10-2026		
Making simple Block Models	Group-I	17-10-2026		
Making simple Block Models	Group-II	22-10-2026		
Conversion of 2D drawing into 3D models	Group-I	24-10-2026		
Conversion of 2D drawing into 3D models	Group-II	31-10-2026		
Conversion of 2D drawing into 3D models	Group-I	05-11-2026		
Conversion of 2D drawing into 3D models	Group-II	07-11-2026		
Preparation of Polyhedron-Octahedron & Dodecahedron	Group-I	12-11-2026		
Preparation of Polyhedron-Octahedron & Dodecahedron	Group-II	19-11-2026		
Preparation of Polyhedron-Octahedron & Dodecahedron	Group-I	21-11-2026		
Preparation of Polyhedron-Octahedron & Dodecahedron	Group-II	26-11-2026		
Preparation of Polyhedron-Octahedron & Dodecahedron	Group-I	28-11-2026		



Signature of Teacher

(Urvashi Sharma)



Signature of HOD

(Ar. Rajeev Bhardwaj)