

<b>(Scheme -2018 onwards) Semester – I</b>										
Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-101A	Architectural Design -I	1	0	5	0	120	80	200	6	6hrs
AR-102A	Building Construction -I	1	0	3	0	60	40	100	4	4 hrs
AR-103A	Architectural Drawing-I	1	0	3	0	60	40	100	4	4 hrs
AR-104A	Architectural Graphics-I	1	0	3	0	60	40	100	4	4 hrs
AR-105A	Theory of Design-I	2	1	0	0	40	60	100	3	3 hrs
AR-106A	Building Sciences-I (Materials)	2	1	0	0	40	60	100	3	3 hrs
AR-107A	Workshop-I	0	0	0	2	50	-	50	1	No Exam (Internal viva-voce)
BTHU AR-101B	English	2	0	0	0	40	60	100	2	3 hrs
BTHU AR-102B	English(Lab)	0	0	0	2	30	20	50	1	As per B.tech scheme
<b>TOTAL</b>		<b>10</b>	<b>2</b>	<b>14</b>	<b>4</b>	<b>500</b>	<b>400</b>	<b>900</b>	<b>28</b>	

<b>(Scheme -2018 onwards) Semester – II</b>										
Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-201A	Architectural Design -II	1	0	5	0	120	80	200	6	6hrs *
AR-202A	Building Construction -II	1	0	3	0	60	40	100	4	4 hrs
AR-203A	Architectural Drawing-II	1	0	2	0	60	40	100	3	4 hrs
AR-204A	Architectural Graphics-II	1	0	3	0	60	40	100	4	4 hrs
AR-205A	Structure Design-I	2	1	0	0	40	60	100	3	3 hrs
AR-206A	Structure System-I	2	1	0	0	50	-	50	3	No Exam (Internal viva-voce)
AR-207A	History of Architecture -I	3	0	0	0	40	60	100	3	3 hrs
AR-208A	Workshop-II	0	0	0	2	50	-	50	1	No Exam (Internal viva-voce)
<b>TOTAL</b>		<b>11</b>	<b>2</b>	<b>13</b>	<b>2</b>	<b>480</b>	<b>320</b>	<b>800</b>	<b>27</b>	

\*Note: The External marks should be awarded through external jury viva voce.  
Students have to go for a practical training for minimum Four weeks as notified by IKG PTU, during summer vacation.  
The viva-voce for the same will be as per AR-310.

**(Scheme -2018onwards) Semester – III**

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-301A	Architectural Design -III	2	0	3	0	120	80	200	5	6hrs *
AR-302A	Building Construction -III	1	0	3	0	90	60	150	4	4 hrs
AR-303A	Architectural Drawing-III	1	0	2	0	50	50	100	3	4 hrs
AR-304A	History of Architecture-II	2	1	0	0	40	60	100	3	3 hrs
AR-305A	Climate & Architecture-I	2	1	0	0	40	60	100	3	3 hrs
AR-306A	Structure Design-II	2	1	0	0	40	60	100	3	3 hrs
AR-307A	Surveying & Levelling	1	0	0	2	40	60	100	2	3hrs
AR-308A	Building Science-II (Geology)	2	0	0	0	40	60	100	2	3 hrs
AR-309A	Computer Application-I	1	0	0	2	60	40	100	2	External Viva-Voce
AR-310A	Institutional Summer Vacation Training	4 week				50	-	50	1	No Exam

\*Note: The External marks should be awarded through external jury viva voce.

<b>TOTAL</b>		<b>14</b>	<b>3</b>	<b>8</b>	<b>4</b>	<b>570</b>	<b>530</b>	<b>1100</b>	<b>28</b>	
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**(Scheme -2018 onwards) Semester – IV**

Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-401A	Architectural Design -IV	1	0	5	0	120	80	200	6	6 hrs*
AR-402A	Building Construction- IV	1	0	4	0	90	60	150	5	4 hrs
AR-403A	Architectural Graphics-III	1	0	2	0	60	40	100	3	4 hrs
AR-404A	Theory of Design-II	2	1	0	0	40	60	100	3	3 hrs
AR-405A	History of Architecture-III	2	1	0	0	40	60	100	3	3 hrs
AR-406A	Structure System-II	2	0	0	0	50	-	50	2	External Viva-Voce
AR-407A	Building Services-I	2	1	0	0	40	60	100	3	3 hrs
AR-408A	Computer Application-II	1	0	0	2	40	60	100	2	External Viva-Voce

\*Note: Evaluation will be through external jury.

<b>TOTAL</b>		<b>12</b>	<b>3</b>	<b>11</b>	<b>2</b>	<b>480</b>	<b>420</b>	<b>900</b>	<b>27</b>	
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<b>(Scheme -2018onwards) Semester – V</b>										
Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-501A	Architectural Design -V	1	0	7	0	180	120	300	8	12 hrs*
AR-502A	Building Construction- V	1	0	4	0	90	60	150	5	4 hrs
AR-503A	Theory of Design-III	2	1	0	0	40	60	100	3	3 hrs
AR-504A	History of Architecture-IV	2	1	0	0	40	60	100	3	3 hrs
AR-505A	Structure Design-III	2	1	0	0	40	60	100	3	3 hrs
AR-506A	Building Services-II	2	1	0	0	40	60	100	3	3 hrs
AR-507A	Fundamental of Sustainable Architecture	2	0	0	0	40	60	100	2	3 hrs
<b>*Note: Evaluation will be through external jury.</b>										
<b>TOTAL</b>		<b>12</b>	<b>4</b>	<b>11</b>	<b>0</b>	<b>470</b>	<b>480</b>	<b>950</b>	<b>27</b>	

<b>(Scheme- 2018 onwards) Semester –VI</b>										
Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-601A	Architectural Design -VI	2	0	6	0	180	120	300	8	12 hrs*
AR-602A	Building Construction-VI	1	0	4	0	120	80	200	5	4 hrs
AR-603A	Landscape Architecture-I	2	1	0	0	40	60	100	3	3 hrs
AR-604A	Interior Design-I	2	0	0	0	40	60	100	2	3 hrs
AR-605A	Estimating, Costing and Specifications-I	2	0	0	0	40	60	100	2	3 hrs
AR-606A	Architectural Legislation-I	2	0	0	0	40	60	100	2	3 hrs
AR-607A	Building Services-III	2	1	0	0	40	60	100	3	3 hrs
AR-608A	Socio-economic Aspects of Architecture	2	0	0	0	40	60	100	2	3 hrs
<b>*Note: Evaluation will be through external jury.</b>										
<b>TOTAL</b>		<b>15</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>540</b>	<b>560</b>	<b>1100</b>	<b>27</b>	

<b>(Scheme- 2018 onwards) Semester –VII</b>										
Course Code	Course Title	L	T	S	P	Marks Distribution		Total Marks	Credits	Duration of Exam
						Internal	External			
AR-701A	Practical Training Programme	0	0	0	0	350	150	500	18	*One Full Semester
<b>*Note: The External marks shall be awarded through External jury viva voce.</b>										
<b>TOTAL</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>350</b>	<b>150</b>	<b>500</b>	<b>18</b>	



# III Semester Syllabus – 2018

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

**Uni. Exam Marks - 80**

**Sessional Marks - 120**

**Duration of Exam – 06 hrs. (Evaluation to be done through viva- voce by external jury)**

**No. of Contact Hours – 05 per week**

**Credits- 5**

**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.

**OBJECTIVE:**

- To create awareness about the role and importance of physical factors in Architectural Design functions and forms (in applied form), their relationship.

**CONTENT:**

The design program to include:

- House, Primary School, Cafeteria, Post Office, Guest House, Youth Hostel etc.

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

**TEACHING METHODOLOGY:**

- 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.

**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.

**SUGGESTED READING:**

- Ching, Frank D.K., “*Architecture: Form, Space & Order*”, John Wiley, Hoboken, 2007.
- Parmar, V.S., “*Design Fundamentals in architecture*”, Somaiya Pvt. Ltd, Mumbai, 1997.
- Vandyke, Scott., “*From Line to Design*”, Van Nostrand Reinhold, 1990.
- Scott, Robert Gillam., “*Design Fundamentals*”, Robert E. Krieger, 1980.
- E&OE., “*Architects Hand Book and Planning*”, Ilife & Sons Ltd, 1963.
- Watson, Donald, Crosbie, Michael J., “*Time-Saver Standards for architectural design*”, McGraw- hill education, 2001.
- Dechiara, Joseph, Crosbie, Michael J., “*Time-saver standards for building types*”, McGraw- hill education, 2001.

**B. ARCHITECTURE - III SEM.  
BUILDING CONSTRUCTION – III  
(AR – 302A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 90**

**Duration of Exam – 04 hrs**

**No. of Contact Hours – 04 per week**

**Credits- 4**

**INTENT:**

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

**OBJECTIVE:**

- To Understand and learn the construction methods and process in R.C.C.
- To understand and learn the cladding method with masonry material.

**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.
- Construction of PCC, Terrazzo, (Cast-in-situ and tiles) and various Stone, Marble, Vitrified Tile flooring.

**PART C**

- Section through a Double Storied Building showing the details of Foundation, Floor, Window, Lintel, Chhajja, Staircase, R.C.C Roof, Terrace and Parapet.

**TEACHING METHODOLOGY:**

- 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:**

- Examiner is required to set total six questions, three questions from part A, two question from part B and One compulsory question from part C and students are required to attempt total four questions, one from each unit including one compulsory question from part C.

**SUGGESTED READING:**

- Mitchel, G.A., "Elementary Building Construction", B T Batsford Ltd, London , 1961.
- Punmia B.C., "Building Construction", Laxmi, 2016.
- 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, Frank D.K., "Building Construction Illustrated", John Wiley, New York 2003.

**B. ARCHITECTURE-III SEM.  
ARCHITECTURAL DRAWING-III  
(AR - 303A)**

**Uni. Exam Marks - 50**

**Sessional Marks - 50**

**Duration of Exam – 04 hrs**

**No. of Contact Hours – 03 per week**

**Credits- 3**

**INTENT:**

- To make students learn the techniques to represent different objects through 3-D geometry and developing skill for visualization of 3-D geometric forms for use in architectural designing.

**OBJECTIVE:**

- Familiarizing with the 3-D drawings of the building with Sciography.

**CONTENT:**

**PART A**

- Sciography in plans and elevations.
- Sciography in axonometric projections.

**PART B**

- Perspective by grid point method and Measuring Line methods.
- Sciography in Perspectives (both one point and two point perspective).

**GUIDELINES FOR PAPER SETTER:**

- Two questions are to be set from each unit. Students would require to attempt one question from each part.

**SUGGESTED READING:**

- Bhatt, N.D., Panchal, V.M., “Engineering Drawing”, Charotar 48<sup>th</sup> edition, 2005.
- Ching, Frank D.K., “Architectural Graphics”, Van nostrand Reinhold, 5<sup>th</sup> edition, 2009.
- Gill, W. Robert., “Manual Rendering With Pen and Ink”, 1990-04.
- Reekie, Fraser Ronald., “Reekie’s Architectural Drawing”, Tony K. McCarthy Wiley, August 1995.
- McGoodwin, Henry., “Architectural shade and shadows”, Ulan Press, 2012.

**B. ARCHITECTURE - III SEM.  
HISTORY OF ARCHITECTURE - II  
(AR - 304A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of Contact Hours – 03 per week**

**Credits- 3**

**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.

**OBJECTIVE:**

- Study of world Architecture from the Early Christian to Renaissance period.

**CONTENT:**

**PART A**

- Early Christian Architecture
- Byzantine Architecture
- Romanesque Architecture

**PART B**

- Gothic Architecture
- Renaissance Architecture- origin, growth and development in Europe.
- Mannerism – basic contents and its impact on the development of architecture.
- Baroque and Rococo Style.

**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.
- Three questions are to be set from each part and student would be required to attempt minimum two questions 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.

**SUGGESTED READING:**

- Fletcher, Banister., “A History of Architecture”, University of London, The Antholone Press, 1986.
- Fergusson, James., Willey, John, “A History of Architecture”, Low Price Publication, 2012.
- Fergusson, James., Willey, John, “History of Indian & Eastern Architecture”, Saraswati press, 2012.
- Tadgell, Christophe., “The History of Architecture in India”, Phaidon Press,1994.



**B.ARCHITECTURE - III SEM.  
CLIMATE AND ARCHITECTURE - I  
(AR – 305A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 03 per week**

**Credits- 3**

**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.

**OBJECTIVE:**

- To study fundamentals, Movement of sun, Thermal comfort, climate zones to understand their influence on building designs.

**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 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.

**SUGGESTED READING:**

- Koenigsberger, O.H., “Manual of Tropical Housing & Building”, University press, 1975.
- Kukreja, C.P., “Tropical Architecture”, McGraw-Hill, 1978.
- Evans, Martin., “Housing, Climate & Comfort”, Architectural Press, 1980.
- Lippmeier, Georg., “Building in the Tropics, Callwey, 1980
- Govini, Baruch., “Man climate and architect”, Spon press,1990.
- Dahl, Torben., “Climate and architecture”, Routledge, 2009.
- Olgyay, Victor., “Design with climate” , Princeton University press, 2015.
- Krishan, Arvind., “Climate Responsive Architecture”, McGraw hill education, 2017.



**B.ARCHITECTURE - III SEM.  
STRUCTURE DESIGN - II  
(AR – 306A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of Contact Hours – 03 per week**

**Credits- 3**

**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.

**OBJECTIVE:**

- To study structural design of various elements of building like slab, column, foundation.

**CONTENT:**

**PART A**

- Design of single reinforced beams, doubly reinforced beams, cantilever beams; depth/thickness of section area of reinforcement, steel 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 and 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.

**TEACHING METHODOLOGY:**

- Structural design shall be supplemented by structural drawings.

**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 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.

**SUGGESTED READING:**

- Bansal, R. K., “Engineering Mechanics & Strength of Materials Publisher”, Laxmi Pvt Limited, 1998.
- Rao, K.L., “Applied Mechanics”, McGraw hill education.
- Mehta, J. C., “Applied Mechanics”, New Asian, 1963.
- Timoshenko, Stephen., “Strength of Materials”, Krieger, 1976.

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

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam– 03 hrs**

**No. of Contact Hours – 03 per week**

**Credits- 2**

**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.

**OBJECTIVE:**

- To study the distinct methods of surveys, levelling. Study contouring and its elements.

**CONTENT:**

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

**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 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.

**SUGGESTED READING:**

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



**B.ARCHITECTURE - III SEM.  
BUILDING SCIENCE – II (GEOLOGY)  
(AR – 308A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of Contact Hours – 02 per week**

**Credits- 2**

**INTENT:**

- To make students understand the Role and Importance of rocks, soil and their characteristic properties in forming the Earth and natural climates.

**OBJECTIVE:**

- To study the various components of earth crust, minerals, soils and soil bearing capacity.

**CONTENT:**

**PART A**

- General Geology of Earth's crust, Modes of Rock formation, classification.
- Rock forming minerals– Their characteristics and specifications. Factors governing selection of Building Stones, geological criteria governing selection of sites.
- Earth quack and Plate tectonics.

**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.
- Foundation type for different soils.
- Causes and effects of natural calamities.

**PART C**

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

**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 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.

**SUGGESTED READING:**

- Arora, D.S., “Geology for Engineers”, Abhishek Publisher, 2000.
- Arora, K.R., “Soil Mechanics and Foundation Engineering”, Standard publisher, 2009.
- Khanna, P.N., “civil engineering and handbook”, UBS, 2012.
- Punmia, B.C., “Soil engineering and foundation engineering”, Laxmi Pvt. Ltd., 2005.
- Singh, Prabin., “Engineering and general geology”, S.k. kataria & sons, 2013.
- Verma, B.P., “Rock mechanics for engineers”, Khanna Publication, 1985.

**B.ARCHITECTURE - III SEM.  
COMPUTER APPLICATIONS - I  
(AR – 309A)**

**Uni. Exam Marks - 40**

**Sessional Marks - 60**

**Duration of Exam – No Exam (External Viva Voice)**

**No. of Contact Hours – 03 per week**

**Credits- 2**

**INTENT:**

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

**OBJECTIVE:**

- Teaching basics of Computers including introduction to basic hardware, operating systems and operative languages.

**CONTENT:**

**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.

**TEACHING METHODOLOGY:**

- 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.

**EVALUATION METHODOLOGY:**

- 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.

**SUGGESTED READING:**

- Autodesk , “The Hitchhiker's Guide to AutoCAD Basics”, 2018.

**B.ARCHITECTURE - III SEM.  
INSTITUTIONAL SUMMER VACATION TRAINING  
(AR – 310A)**

**Uni. Exam Marks: No Exam**

**Sessional Marks - 50**

**Duration of Exam – No Exam (External Viva Voice)**

**4 week Summer Training**

**Credits: 1**

**Four (04) weeks Institutional Summer Vacation Training after 2<sup>nd</sup> semester for**

**B. Architecture program**

**INTENT:** *The training is compulsory and is for the orientation of the students of the B. Architecture so that they are aware of/can identify the industrial, departmental, environmental, societal and other issues that are a challenge in the society and develop the ability to find solutions.*

<b>Module</b>	<b>Content</b>	<b>Remarks</b>
I	<ul style="list-style-type: none"><li>• Assignment on Building Terminology/</li></ul>	20 hours
II	<ul style="list-style-type: none"><li>• Making Building Layout Plans with measurements of Your Existing House<ul style="list-style-type: none"><li>- Layout of Ground Floor Plan</li><li>- Layout of First Floor Plan</li><li>- Kitchen Detail ,</li><li>- Toilet Detail</li></ul></li></ul>	50 hours
III	<ul style="list-style-type: none"><li>• Student shall do Market Survey for availability and rates of Construction materials available in the market along with samples.</li></ul>	30 hours
IV	<ul style="list-style-type: none"><li>• Visit to Construction Site.</li><li>• Study and Visit to Brick Kiln.</li></ul>	40 hours
Total Time		140 hours

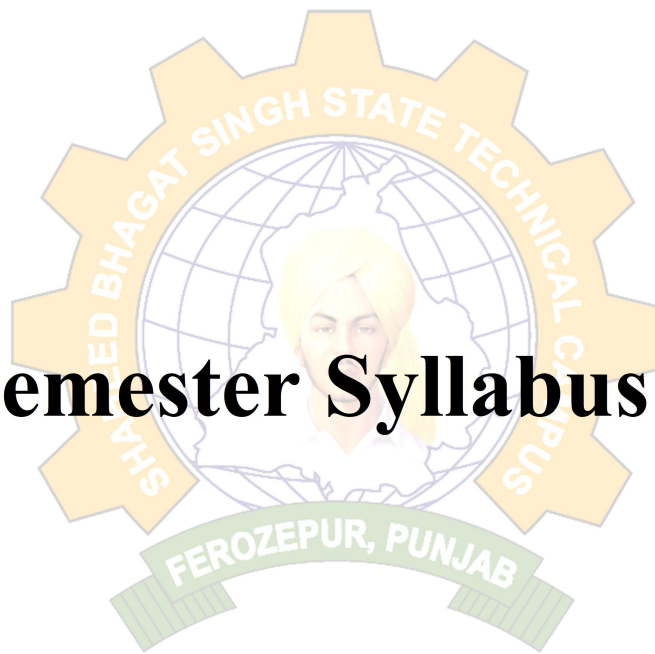
**EVALUATION METHODOLOGY:**

- i) Four (04) weeks Institutional Summer Vacation Training after 2<sup>nd</sup> semester is a compulsory having One Credit course.
- ii) The students are required to maintain a daily dairy and submit it along with the “Problem formulation report”.
- iii) Student falling short of 75% attendance criterion is required to repeat the training with next batch.
- iv) Continuous evaluation to be done and proper record to be maintained.

**The students need to submit a summary report along with sheets of the institutional training of Module I-II.A detailed report/ scrapbook of inventory and market survey done in Module III. The viva exam for the subject will be conducted along with the practical exams of the End-Semester Examination of Third Semester**



# **IV Semester Syllabus – 2018**



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

**Uni. Exam Marks - 80**

**Sessional Marks - 120**

**Duration of Exam – 06 hrs. (Evaluation to be done through viva- voce by external jury)**

**No. of contact hours – 06 per week**

**Credits – 6**

**INTENT:**

- To make students understand Vernacular architecture and associate terms, interrelationship of climate and architecture prevailing in the rural context in the state of Punjab.

**OBJECTIVE:**

- Students having knowledge and understanding the construction methods of designing buildings, material used and elements of Vernacular Architecture used in the rural areas of the state of Punjab.

**CONTENT:**

- Detailed study, Documentation and analysis of a rural settlement.
- Design proposal for the settlement selected for study 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 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.

**SUGGESTED READING:**

- Ching, Frank D.K., “*Architecture: Form, Space & Order*”, John Wiley, Hoboken,2007.
- Parmar, V.S., “*Design Fundamentals in architecture*”, Somaiya Pvt. Ltd, Mumbai,1997.
- Vandyke, Scott., “From Line to Design”, Van Nostrand Reinhold,1990.
- Scott, Robert Gillam., “Design Fundamentals”, Robert E. Krieger, 1980.
- E&OE., “Architects Hand Book and Planning”, Ilife & Sons Ltd, 1963.
- Watson, Donald, Crosbie, Michael J., “Time-Saver Standards for architectural design”, McGraw-hill education,2001.
- Dechiara, Joseph, Crosbie, Michael J., “Time-saver standards for building types”, McGraw- hill education,2001.

**B. ARCHITECTURE - IV SEM.  
BUILDING CONSTRUCTION-IV  
(AR – 402A)**

**Uni. Exam Marks - 60**

**Sessional Marks – 90**

**Duration of Exam – 04 hrs**

**No. of contact hours – 05 per week**

**Credits – 5**

**INTENT:**

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

**OBJECTIVE:**

- The students should have knowledge and understanding of details and components of timber construction in buildings and various roof covering.

**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 lying.
- Floor/Roof Coverings, Staircases and Doors and Windows.
- Preparing Construction plates.
- Visit to Forest Research Institute, Dehradun or similar placed institutions.
- Models of Trusses with roof coverings -- to be compulsory.

**GUIDELINES FOR PAPER SETTER:**

- The examiner is required to set six questions (3from each Unit), out of which the students are required to attempt four question (selecting two from each Units).
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

**SUGGESTED READING:**

- Mitchel,G.A., “Elementary Building Construction”, B T Batsford Ltd, London , 1961.
- Punmia, B.C., “Building Construction”, Laxmi.
- 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, Frank D.K., “Building Construction Illustrated”, John Wiley, New York 2003.

**B. ARCHITECTURE-IV SEM.  
ARCHITECTURAL GRAPHICS-III  
(AR-403A)**

**Uni. Exam Marks - 40**  
**Sessional Marks - 60**  
**Duration of Exam - 04 hours**  
**No. of Contact Hours – 03 per week**  
**Credits – 3**

**INTENT:**

- Ability to select types and fonts, source and insert graphic material in hand/presentation skills considering visual organization as a key component of effective communication.

**OBJECTIVE:**

- Proficiency in presentation with hand skills for further design applications.

**CONTENTS:**

**PART A**

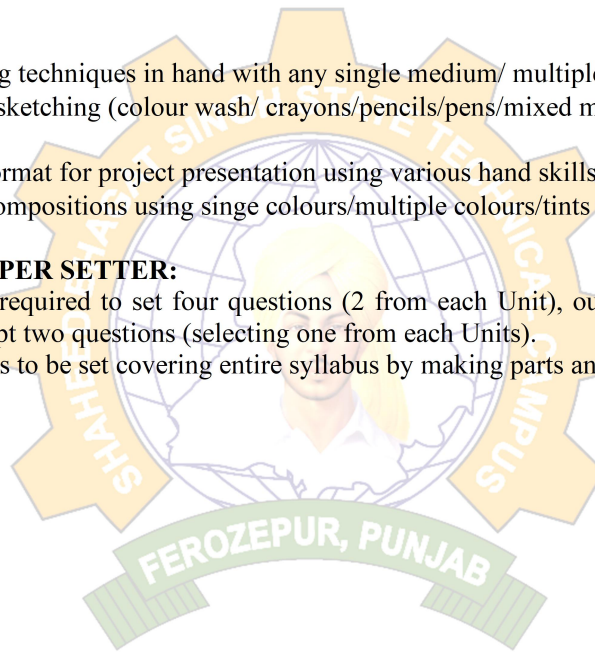
- Rendering techniques in hand with any single medium/ multiple medium/ mixed medium.
- Outdoor sketching (colour wash/ crayons/pencils/pens/mixed medium)

**PART B**

- Report format for project presentation using various hand skills/photomontage techniques.
- Colour compositions using single colours/multiple colours/tints and shades of colours.

**GUIDELINES FOR PAPER SETTER:**

- The examiner is required to set four questions (2 from each Unit), out of which the students are required to attempt two questions (selecting one from each Units).
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.



**B.ARCHITECTURE – IV SEM  
THEORY OF DESIGN-II  
(AR- 404A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs.**

**No. of contact hours – 03 per week**

**Credits – 3**

**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.

**OBJECTIVES:**

- 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**

**INDUSTRIAL REVOLUTION**

**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.

**Modern Architecture up to Second World War:-**

- Development of the high-rise building.
- Chicago School of Architecture (1880-1910)- Dankmar Adler and Louis Sullivan.
- Art Nouveau Architecture (1890-1920) - Antoni Gaudi, Joseph Maria Olbrich.
- International style and expressionist.

**PART B**

**GREAT MASTERS**

- Walter Gropius
- Frank Lloyd Wright
- Le- Corbusier India and abroad
- 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.
- Three questions are to be set from each part and student would be required to attempt minimum two 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.

**SUGGESTED READING:**

- Ching, Frank D.K., “*Architecture: Form, Space & Order*”, John Wiley, Hoboken,2007.
- Baker,Geoffery H.,“Design strategies in Architecture”, Taylor & Francis,1996.
- Global Architecture (ADA Aditia Tokyo) Vol - 2, 3 & 4.
- Fletcher, Banister., “A History of Architecture”, University of London, TheAntholone Press, 1986.
- Spaeth,David.,“Mies Vander Rohe”, Rizzoli, 1988.
- Storrer,William Allin., “The Frank Lloyd Wright Companion”University of Chicago, 2006.
- Larkin,David, Brooks, Bruce., “Frank Lloyd Wright- The Masters Works”,Rizzoli, 2000.
- Brooks,H.Allen., “The Le Corbusier”,Princeton University, 1987.
- Atlas, Phaidon., “20th Century World Architecture”, Phaidon,2012.
- Cohen, Jean-Louis., “The Future of Architecture Since 1889”, Phaidon, 2016.
- Sembach , Klaus-Jürgen., “Art Nouveau”, Taschen, 2007.
- Droste, Magdalena., “Bauhaus”, Taschen,2019.



**B. ARCHITECTURE-IV SEM.  
HISTORY OF ARCHITECTURE-III  
(AR – 405A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 03 per week**

**Credits – 3**

**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.

**OBJECTIVE:**

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

**CONTENT:**

**PART- A**

- Chulkyan and Ashoka period of Hindu Architecture.
- Dravidian Architecture.
- Indo Aryan Architecture
- Orissa
- Gujrat
- Khajuraho

**PART - B**

- Architecture of Imperial or Delhi style under various rules.
- Architecture of Provincial Styles.
- Architecture of Mughal period.

**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 student would be required to attempt minimum two questions 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.

**SUGGESTED READING:**

- Brown, P., “History of Architecture Buddhist and Indian”, CBS, 2005
- Grover, Satish., “Islamic Architecture in India”, CBS, 2010.
- Fletcher, Banister., “A History of Architecture”, University of London, the Antholone Press, 1986.
- Fergusson, James, Willey, John., “A History of Architecture”, Dodd, Nabu press, 2012.
- Fergusson, James, Willey, John., “History of Indian & Eastern Architecture”, saraswati press, 2012.
- Tadgell, Christopher., “The History pf Architecture in India”, Phaidon press, 1994

**B.ARCHITECTURE-IV SEM.  
STRUCTURE SYSTEM-II  
(AR –406A)**

**Uni. Exam Marks – No Exam**

**Sessional Marks - 50**

**Duration of Exam.–No exam (Viva-Voice)**

**No. of contact hours – 02 per week**

**Credits – 2**

**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.

**OBJECTIVE:**

- To make students learn basics of structure with emphasis on learning by doing and making 3-d models to provide the students with different spatial experience.

**CONTENT:**

**PART A**

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

**PART B**

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

**PART C**

- **Vertical Structure System for High Rise Buildings.**

**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 at least four models to demonstrate the various structural system. Students must be taken to Pragati Maiden & other Building centres in New Delhi for better exposure.

**EVALUATION METHODOLOGY**

- Evaluation is to be done through viva voce on model submitted by jury.

**SUGGESTED READING:**

- Schodek, Denial., “Structures”, Pearson, 2013.
- Herzog, Thomas., “Pneumatic Structures”, Oxford University, 1976.
- candela, Felix., “shell structure”.
- Nervi, P.L., “Structures”, F.W. Dodge Corp., 1956.



**B.ARCHITECTURE-IV SEM.  
BUILDING SERVICES-I  
(AR – 407A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 03 per week**

**Credits – 3**

**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.

**OBJECTIVE:**

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

**CONTENT:**

**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 and faucets- 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 wares-- Wash basins, WC's, Bath Tubs, Sink, Urinals, Bidets, Flushing Cistern, types of Traps, etc.
- Various types of joints.
- Septic Tanks, and understanding of working, visit to STP.
- 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.
- Drain Gullies.
- 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.
- Site visit for STP.

**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 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.

**SUGGESTED READING:**

- Duggal, K.N., “Public Health Service”, Chand, 1967.
- Birdi, G.S., “Water Supply And Sanitation”, Dhanpat Rai, 2010.
- Barry, R., “Building Services, John Wiley and Sons Ltd 1998
- Garg, S. K., “Water Supply Engineering”, Khanna, 2010.
- Golany, Gideon S., “Design for Arid Regions”, Van Nostrand Reinhold, 1983.
- Givoni, B., “Man, Climate & Architecture”, Von Nostrand Reinhold Company, 1981.
- Krishan, Arvind., “Climate Responsive Architecture”, McGraw hill education, 2017.
- C.B.R.I, Roorkee, Reserch notes on climate.
- TERI, Energy Efficient Buildings in India.



**B.ARCHIECTURE-IV SEM.  
COMPUTER APPLICATIONS–II  
(AR – 408A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – No Exam (External Viva Voice)**

**No. of contact hours – 03 per week**

**Credits – 2**

**INTENT:**

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

**OBJECTIVE:**

- 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 Software's.
- 3-D Modelling on Google Sketch Up.

**PART B**

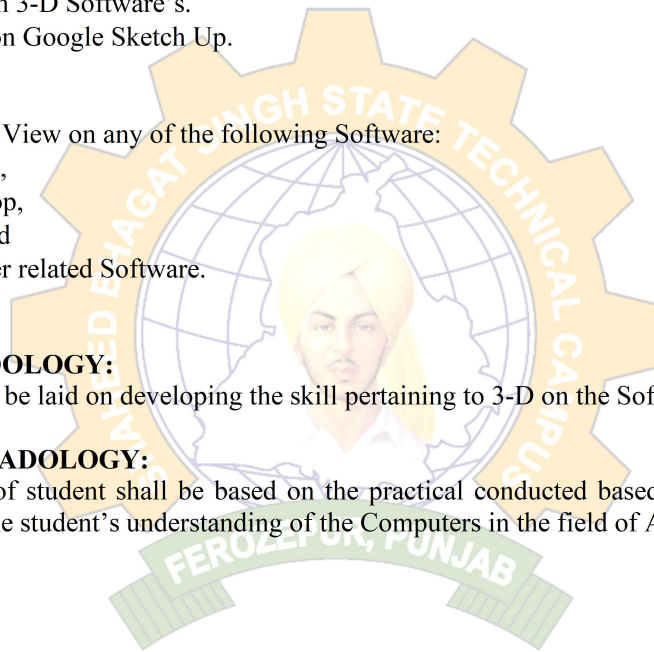
- Rendering of the View on any of the following Software:
  - 3D- Max,
  - Photoshop,
  - V-ray and
  - Any other related Software.

**TEACHING METHODOLOGY:**

- Emphasis should be laid on developing the skill pertaining to 3-D on the Software.

**EVALUATION METHADODOLOGY:**

- 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.





# V Semester Syllabus – 2018

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

**Uni. Exam Marks -120**

**Sessional Marks - 180**

**Duration of Exam – 12 hrs . (Evaluation to be done through viva- voce by external jury)**

**No. of contact hours – 08 per week**

**Credits- 8**

**INTENT:**

- 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.

**OBJECTIVE:**

- 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. Services integration and structural behaviour.

**CONTENT:**

Design of multi storied residential and commercial buildings up to max. 5 stories integrating architecture, structure, form and building services along with urban context of site.

- Hotels, Motels, Hostels, Club Houses etc.
- Institution Buildings, Small Hospital (50 bedded).
- Cultural center.

**TEACHING METHODOLOGY:**

- 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 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.

**SUGGESTED READING:**

- Ching, Frank D.K., “*Architecture: Form, Space & Order*”, John Wiley, Hoboken,2007.
- Parmar, V.S., “*Design Fundamentals in architecture*”, Somaiya Pvt. Ltd, Mumbai,1997.
- Vandyke, Scott., “*From Line to Design*”, Van Nostrand Reinhold,1990.
- Scott, Robert Gillam., “*Design Fundamentals*”, Robart E. Krieger, 1980.
- E&OE., “*Architects Hand Book and Planning*”, Ilife & Sons Ltd, 1963.
- Watson, Donald, Crosbie, Michael J., “*Time-Saver Standards for architectural design*”, McGraw-hill education, 2001.
- Dechiara, Joseph, Crosbie, Michael J., “*Time-saver standards for building types*”, McGraw- hill education, 2001.

**B.ARCHITECTURE – V- SEM.  
BUILDING CONSTRUCTION-V  
(AR – 502A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 90**

**Duration of Exam – 04 hrs**

**No. of contact hours – 05 per week**

**Credits- 5**

**INTENT:**

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

**OBJECTIVE:**

- 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.

**CONTENT:**

**PART A**

**Steel, Aluminium, and UPVC**

- Doors and windows (STEEL SECTIONS).
- Special doors and their detailing like:
  - Sliding and folding (STEEL)
  - Collapsible (STEEL)
  - Rolling shutter (curtain lath + curtain rods) (STEEL)
  - Pivoted
- Partitions (glass bricks, wooden, board), Paneling (board, fiber–sheet, polycarbonate sheet) and false ceiling (gypsum board, Pop, aluminum section, plywood, canvas) (ALLUMINIUM AND UPVC).
- Introduction to partitions for large span structures e.g. convention center.

**PART B**

**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.
- Introduction to steel sections.

**TEACHING METHODOLOGY:**

- Field visits to study the uses of metals in construction industry and process of lying 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:**

- The examiner is required to set six questions (3from each Unit), out of which the students are required to attempt four question (selecting two from each Units).
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

**SUGGESTED READING:**

- Mitchel,G.A., “Elementary Building Construction”, B T Batsford Ltd, London , 1961.
- Punmia, B.C., “Building Construction”, Laxmi, 2016.
- 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, Frank D.K., “Building Construction Illustrated”, John Wiley, New York 2003.



**B.ARCHITECTURE – V- SEM.  
THEORY OF DESIGN-III  
(AR – 503A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 03 per week**

**Credits- 3**

**INTENT:**

- 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.

**OBJECTIVE:**

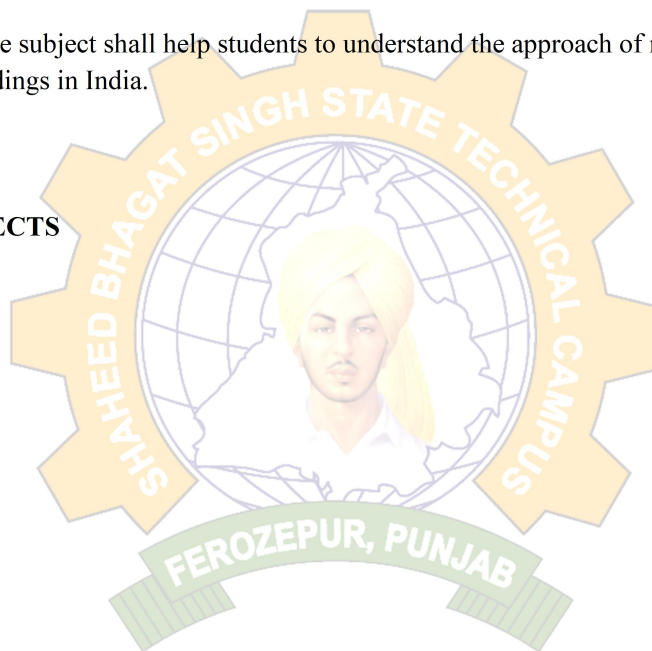
- Teaching of the subject shall help students to understand the approach of master architects towards design of buildings in India.

**CONTENT:**

**PART A**

**FOREIGN ARCHITECTS**

- Louis I.Kahn
- Eero Sarinen
- Philip Johnson
- Paul Rudolph
- Kenzo Tange
- I.M. Pei
- Norman Foster
- Tadao Ando
- Frank Gehry
- James Sterling
- Richard Meier



**PART B**

**INDIAN ARCHITECTS**

- A.P. Kanvinde
- C.M. Correa
- B.V. Doshi
- J.A. Stein
- U.C. Jain
- Raj Rewal
- Laurie Baker
- Nari Gandhi

**TEACHING METHODOLOGY:**

**Two important buildings**

- 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.

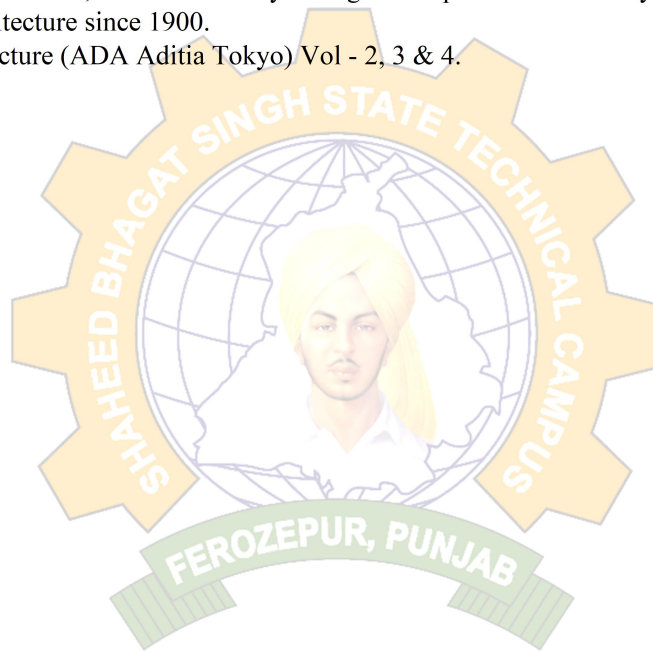


**GUIDELINES FOR PAPER SETTER:**

- One compulsory question 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 student would be required to attempt minimum two questions 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.

**SUGGESTED READING:**

- Joglekar, M.U., Das, S.K., “Contemporary Indian Architecture Housing and urban development”, Galgotia, 1995.
- Kanvinde, A.P., “Campus planning in India”.
- Ching, Frank D.K., “*Architecture: Form, Space & Order*”, John Wiley, Hoboken, 2007.
- Fletcher, Banister., “A History of Architecture”, University of London, TheAntholone Press, 1986.
- Spaeth, David., “Mies Vander Rohe”, Rizzoli, 1988.
- Storrer, William Allin., “The Frank Lloyd Wright Companion” University of Chicago, 2006.
- Modern Architecture since 1900.
- Global Architecture (ADA Aditia Tokyo) Vol - 2, 3 & 4.



**B.ARCHITECTURE – V SEM.  
HISTORY OF ARCHITECTURE-IV  
(AR – 504A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 03 per week**

**Credits- 3**

**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 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.

**OBJECTIVE:**

- 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.

**CONTENT:**

**PART A**

**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.

**PART B**

- Post modernism
- Eclecticism
- Deconstructivism
- High tech architecture
- Sustainable architecture

**PART C**

**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.
- Typical Havelis in Punjab.

**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 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.

**SUGGESTED READING:**

- Brown, P., “History of Architecture Buddhist and Indian”, CBS, 2005
- Grover, Satish., “Islamic Architecture in India”, CBS, 2010.
- Fletcher, Banister., “A History of Architecture”, University of London, the Antholone Press, 1986.
- Fergusson, James, Willey, John., “A History of Architecture”, Dodd, Nabu press, 2012.
- Fergusson, James, Willey, John., “History of Indian & Eastern Architecture”, saraswati press, 2012



**B.ARCHITECTURE - V SEM.  
STRUCTURE DESIGN –III  
(AR – 505A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 03 per week**

**Credits- 3**

**INTENT:**

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

**OBJECTIVE:**

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

**CONTENT:**

**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.

**TEACHING METHODOLOGY:**

- Teaching methodology shall involve class room teaching, expert lectures, visit to the construction sites and making models. Structural design shall be supplemented by structural drawings.

**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 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.

**SUGGESTED READING:**

- Jain, A.K., “Reinforced Concrete”, Nem chand & Bros, 7<sup>th</sup> Edition.
- Vazirani, V.N., “Design of reinforced Concrete Structures”,
- Bhavikatti, S.S., “Advance RCC Design”, New Age international Pvt. Ltd., 2016.

**B.ARCHITECTURE - V SEM.  
BUILDING SERVICES –II  
(AR – 506A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of periods – 03 per week**

**Credits- 3**

**INTENT:**

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

**OBJECTIVE:**

- Teaching of the subject shall help students to understand the importance and role of Electrical Layouts, Fire Safety and Acoustics in **Buildings using NBC 2016.**

**CONTENT:**

**PART A**

**ELECTRICAL SERVICES**

- Electricity - Ohm's, Kirchoff'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, Lightning and other safety measures for buildings.
- Distribution system, HT, LT and Transformer,

**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, and 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 walking ramps, 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 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.

**SUGGESTED READING:**

- Barry, R., “Building Services”, John Wiley and Sons Ltd, 1998.
- B.I.S., “National Building Code”,2016.
- TERI., “Sustainable Building Design Manual”,2009.
- Jain, V.K., “Handbook of Designing and installation of Services in Buildings”, Khanna publishers, 2000.
- Basak, N.N., “Environmental Engineering”,McGraw Hill Education, 2017
- Stein, Benjamin.,”Mechanical and Electrical Equipment for Buildings”,Wiley, 2009.



**B.ARCHITECTURE – V SEM.**  
**FUNDAMENTAL OF SUSTAINABLE ARCHITECTURE**  
**(AR –507A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 02 per week**

**Credits- 2**

**INTEND:**

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

**OBJECTIVE:**

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

**CONTENT:**

**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.
- Carbon footprint.

**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.

**PART D**

- Case study of sustainable building.
- Tang yan

**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 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.

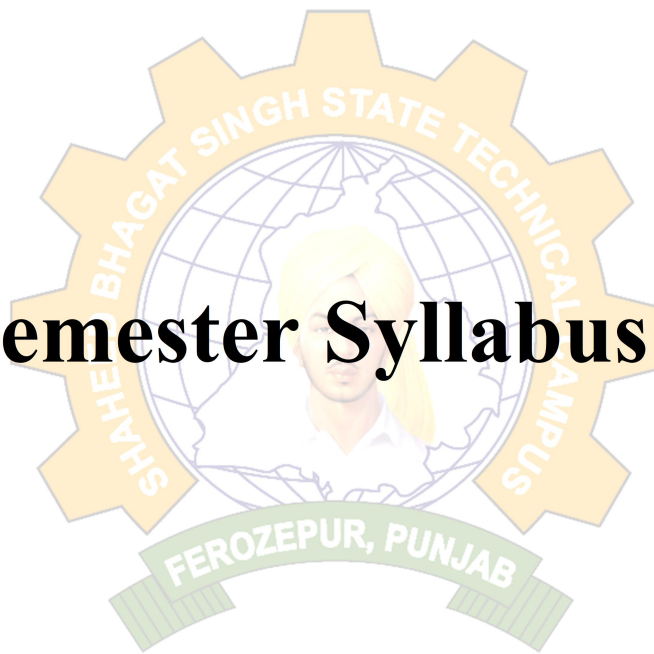
**SUGGESTED READING:**

- Koenigsberger, O.H., “Manual of Tropical Housing & Building”, University press, 1975.
- Kukreja, C.P., “Tropical Architecture”, McGraw-Hill, 1978.
- Evans, Martin., “Housing, Climate & Comfort”, Architectural Press, 1980.
- Lippsmeier, Georg., “Building in the Tropics, Callwey, 1980
- Govini, Baruch., “Man climate and architect”, Spon press,1990.
- Dahl, Torben., “Climate and architecture”, Routledge, 2009.
- Olgyay , Victor., “Design with climate" , Princeton University press, 2015.
- Krishan, Arvind., “Climate Responsive Architecture”, McGraw hill education, 2017.
- Majumdar, Mili., “Energy Efficient Buildings in India”, TERI, 2002.
- Whole building design guide.





# **VI Semester Syllabus – 2018**



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

**Uni. Exam Marks - 120**

**Sessional Marks - 180**

**Duration of Exam – 12 hrs (Evaluation to be done through viva- voce by external jury)**

**No. of contact hours – 08 per week**

**Credits- 8**

**INTENT:**

- To understand the constraints of designing recreational buildings in an urban or rural setting with respect to socio-cultural, climate and development norms.
- 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.

**OBJECTIVE:**

- 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 expressions and services.
- Students should be able understand and appreciate the inter-relationship between form and scale.

**CONTENT:**

The design program to include:

- Residential School and Tourist Resorts.
- 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.
- Design of mixed use and large span structures such as Art and crafts centers, Performing arts centre, convention centre, Museum and exhibition centre in urban areas, etc.

**TEACHING 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.

**SUGGESTED READING:**

- Ching, Frank D.K., “*Architecture: Form, Space & Order*”, John Wiley, Hoboken,2007.
- Parmar, V.S., “*Design Fundamentals in architecture*”, Somaiya Pvt. Ltd, Mumbai,1997.
- Vandyke, Scott., “*From Line to Design*”, Van Nostrand Reinhold,1990.
- Scott, Robert Gillam., “*Design Fundamentals*”, Robart E. Krieger, 1980.
- E&OE., “*Architects Hand Book and Planning*”, Ilife & Sons Ltd, 1963.
- Watson, Donald, Crosbie, Michael J., “*Time-Saver Standards for architectural design*”, McGraw-hill education, 2001.

- DeChiara, Joseph, Crosbie, Michael J., “Time-saver standards for building types”, McGraw- hill education, 2001.
- Panero, Julius, Zelnik, Martin., “Human Dimension and Interior Space”, Whitney Library of Design, 1979.
- DeChiara, Joseph, Panero, Julius, Zelnik, Martin., “Time Saver Standards for Interior Design and Space Planning”, McGraw Hill, 2001.
- Neuferts, Ernst., “Architects Data”, Blackwell, 2002.
- Sleeper, Ramsey., ‘Architectural Graphic Standards’, Wiley, 2000.
- Miller, Sam F., ‘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- 602A)**

**Uni. Exam Marks - 80**

**Sessional Marks - 120**

**Duration of Exam – 04 hrs.**

**No. of contact hours – 05 per week**

**Credits- 5**

**INTENT:**

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

**OBJECTIVE:**

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

**CONTENT:**

**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, Retrofitting and strengthening of foundation.
- Scaffolding.
- 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.
- Glass wall with patch fittings.
- Aluminum Composite panels.
- Stone (Red sand stone/slates/granite/marble).
- Tile (brick/ vitrified) Grit block finish.
- Shoring.

**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 six questions (3from each Unit), out of which the students are required to attempt four question (selecting two from each Units).
- Questions paper is to be set covering entire syllabus by making parts and mixing the topics.

**SUGGESTED READING:**

- Mitchel,G.A., “Elementary Building Construction”, B T Batsford Ltd, London , 1961.
- Punmia B.C., “Building Construction”, Laxmi.
- 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, Frank D.K., “Building Construction Illustrated”, John Wiley, New York 2003.



**B.ARCHITECTURE - VI SEM.  
LANDSCAPE ARCHITECTURE- I  
(AR- 603A)**

**Uni. Exam Marks - 60**  
**Sessional Marks - 40**  
**Duration of Exam – 03 hrs**  
**No. of contact hours – 03 per week**  
**Credits- 3**

**INTENT:**

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

**OBJECTIVES:**

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

**CONTENT:**

**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 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.

**SUGGESTED READING:**

- Reid, Grant., “Landscape Graphics”, Watson-Guptill, 2002.
- Littlewood, Michael., “Landscape Detailing”, Architectural press, 1993.
- Harris, W.; Dines, Nicolas T., “Time Saver Standard for Landscape Architecture”, McGraw Hill, 2017.

- Simonds, John O.,“Landscape Architecture”, McGraw Hill,1997.
- Laurie, Michael., “Introduction to Landscape Architecture”, Prentice hall, 1985.
- Wattas, Rajnish., “Trees of Chandigarh”, B.R. Corporation.
- Krishen, Pradip.,“Trees of Delhi”,Penguin books Pvt. Ltd., 2006.
- Bose, T.K., “Tropical garden plants in colours”, South Asia book, 1992.
- Randhawa, M.S., “Flowering Trees and Shrubs of India”,1899.



**B.ARCHIECTURE-VI SEM.  
INTERIOR DESIGN- I  
(AR – 604A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 02 per week**

**Credits- 2**

**INTENT:**

- 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.

**OBJECTIVE:**

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

**CONTENT:**

**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 Color, 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.
- 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 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.

**SUGGESTED READING**

- Panero, Julius, Zelnik, Martin., “Human Dimension and Interior Space”, Whitney Library of Design, 1979.
- DeChiara, Joseph, Panero, Julius, Zelnik, Martin., “Time Saver Standards for Interior Design and Space Planning”, McGraw Hill, 2001.



- Jain, Shashi., “Creative Interior Design of Enclosed Spaces”, Management Company, 1994.
- Interior Design- Indoor and outdoor Landscaping-Archi World Compa



**B.ARCHITECTURE – VI- SEM.**  
**ESTIMATING, COSTING & SPECIFICATIONS-I**  
**(AR – 605A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 02 per week**

**Credits- 2**

**INTENT:**

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

**OBJECTIVE:**

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

**CONTENT:**

**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 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.

**SUGGESTED READING:**

- Dutta, B.N., “Estimating & Costing in Civil Engineering”, UBS Pvt. Ltd, 8<sup>th</sup> edition.
- Upadhyay, A.K., “Civil Estimating, Costing and Valuation”, S. K. Kataria Sons, 2009.
- Namavati, Roshan H., “Estimating, Costing and Valuation”, UBS Pvt. Ltd., 2016.
- P.W.D. Specifications.

**B. ARCHITECTURE -VI SEM.**  
**ARCHITECTURAL LEGISLATION-I**  
**(AR – 606A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam - 3 hrs**

**No. of contact hours – 02 per week**

**Credits- 2**

**INTENT:**

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

**OBJECTIVE:**

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

**CONTENT:**

**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, concept of zoning.
- 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 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.

**SUGGESTED READING:**

- Chandigarh Administration., “Building Bye Laws”, 2017.
- PUDA., “Building Bye Laws”.
- Municipal Building Bye Laws.
- Rangwala., “Town Planning”, Charoter, 1990.
- BIS, “National Building Code”, 2016.
- Institute of Town Planners, India., “Readers Volume in Town planning”.

**B.ARCHITECTURE – VI SEM.  
BUILDING SERVICES-III  
(AR – 607A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 03 per week**

**Credits- 3**

**INTENT:**

- 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 multistoried buildings.
- The thrust shall be on understanding the use and application of the services and not the calculation or numerical part.

**OBJECTIVE:**

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

**CONTENT:**

**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.
- Site visit.
- Nano material.

**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 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.

**SUGGESTED READING:**

- Barry, R., “Building Services”, John Wiley and Sons Ltd, 1998.
- B.I.S., “National Building Code”,2016.
- TERI, “Sustainable Building Design Manual”,2009.
- Jain, V.K., “Handbook of Designing and installation of Services in Buildings”, Khanna publishers, 2000.
- Basak, N.N., “Environmental Engineering”,McGraw Hill Education, 2017
- Stein, Benjamin.,”Mechanical and Electrical Equipment for Buildings”,Wiley, 2009.



**B.ARCHITECTURE - VI SEM.**  
**SOCIO ECONOMIC ASPECTS OF ARCHITECTURE**  
**(AR- 608A)**

**Uni. Exam Marks - 60**

**Sessional Marks - 40**

**Duration of Exam – 03 hrs**

**No. of contact hours – 02 per week**

**Credits- 2**

**INTENT:**

- To develop understanding about different aspects of man, society, culture, geographical, demographic, physiological behaviour of society and its impact on architectural development.

**OBJECTIVE:**

- The objectives of this course are to explore the relationship between man and environment, and to familiarize the students with basic concepts/ theories of sociology/ psychology as relevant to architecture.

**CONTENT:**

**PART - A**

- Origin of Man and Society
  - Man as a Social Animal: Instincts versus Drives.
  - Organic Basis of Man's Capacity for culture
  - Human nature and process of Socialisation
- Culture and Society
  - Concept of Culture
  - Cultural Identity, Cultural Diversity, Cultural relativism.
  - Ethnocentrism , Cultural universals
  - Elements of culture
  - Folkways, Norms, Mores, Values, Laws, Social Institutions
  - Material products of cultural objects or artifacts
- Human Nature and Process of Socialisation: Types of Society;
  - Pre-Modern: Hunter's and gathers, Pastoral agrarians and Traditional states
  - Modern Third world/Traditional Society
- Social & Cultural Change
  - Factors of Social Change, discovery and invention, culture diffusions, ideas & ideologies, collective action, technology
  - Resistance to Social Change, Theory of Cultural lag, Technology & Social change
  - Interaction of Technology, Geography & Culture
  - Meaning of Environment, natural and cultural, Ecological Balance, Cultural Environments, natural aspects of Culture, Man-made geographic patterns.
- Geography & natural environments: Mountains, plains, rivers & oceans, natural resources.
  - Relations of Natural Environment to culture extent of influence natural environment, cultural choice, similar habitat different response, different habitat and common response.
  - Natural barriers & human differences, Natural environment and transportation, natural resources and limits of growth, Pollution and conservation.

**PART - B**

- Population and Demography
  - Population growth, population subsistence & natural resources, Malthusian doctrine, optimal population, Birth rates, death rates and economic growth/development.
- Social Interaction and everyday life:
  - Non-verbal communication, social rules, conversation and talk, face body and speech in interaction. Encounters contexts and locations personal space interaction in time and space.
  - Everyday life in cultural and historical perspective.
  - Social Institutions, groups and organization

- The concept of institution. Forms of association-primary and secondary groups, formal organization. Bureaucracy and bureaucratic organization . Non-bureaucratic organization.
- Influences on organizations in the modern world.
- Social Stratification:
  - Concept of social Stratification. Types of social stratification estates, caste and social classes.
  - Social mobility, poverty & inequity. Class consciousness and class conflict. Racial and cultural stratification. Race and culture, Racial prejudice and discrimination , regional age and gender stratification . regional differences communities and neighbourhood and geographic conflicts. Sexual stratification, women in the workforces. Age stratification.
- Globalization of Social life:
  - Third world societies: economic consequence of colonialism, divergence between rich and poor continues.
  - Theoretical perspectives imperialism, dependency. Inter natural economic integration, globalization of media.
- Modern urbanization :
  - The traditional city, feature of modern urbanism, theory of urbanism, Chicago School, Urban Ecology, urbanism as way of life, urbanism as created environment, Harvey- the restructuring castle: urbanism of space. Western urban development, Third world urbanization.

### **PART - C**

- Introductory: Nature of relationship between psychology and spatial behaviour with special reference to Architecture, Urban Design and Physical Planning.
  - Territoriality: Concepts ethnological Basis, Function. Territorial organization among Humans,
  - Three Major Types of territorial space: Micro Space, Meso-Space and Macro-space.
  - Personal Space: (Micro-Space) Meaning variation in personal space behaviour due to social
  - Psychological Environmental and Cultural factors; Personal space and environment with special reference to Interior Design of Public Places.
  - Home Base (Meso Space) Psychological Functions of Home; Determinates of Housing preference; Concept of Neighbourhood as unit of Physical Planning, Subjective definition of Neighbourhood and the related Hierarchy in terms of Interpersonal relationships; Critique of Planners Ideological construction of the meaning and purpose of neighbourhood.
  - Home Range (Macro Space) Hierarchy of Social Spaces: Home Base and range; Spatial pattern of activity System- Time Budgets. Origin and Destination Survey, Orbits of activity and social factors of Class and Sender.
- Cognitive Patterns Mental Maps and orientation Lurch's Theory of Cognitive Mapping; Social and cultural variations in the description cognitive Mapping techniques, Impact of activity on mapping by individuals capsule Images of the whole city.
- Environment: Meaning, Nature of relationship between Environment, Organism and Behaviour Theories of relationship between Environment and Behaviour.
- Hierarchy of Environments: Behavioural Perceptual Operational and Geographical Operational environment and its sub-division; phenomenal, personal and contextual.

### **PART - D**

- Perception: Meaning of Perception, Appreciation cognition, Attitude, and Behaviour.
- Phenomenal Environment: Human Sensory Deprivation and overload; Deviance and pathology in cities; Crowding in Human population, Density and behaviour as mediated by culture and society.
- Phenomenal Environment: Physical
  - Various types of environment and related patterns of behaviour: Street Home, Work Place, School, Prison, Residence conditions for positive interaction thorough Architectural Designing Behaviour- setting and behaviour – nature of relationship. Personal Environment: Behavioural and Experiential: Nature of relationship behaviour Phenomenal

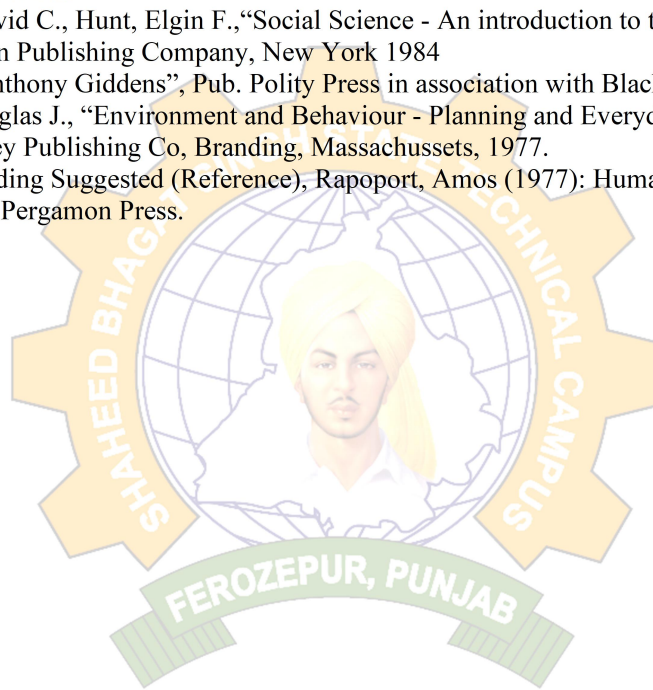
- Environment and Personal environment in determining Perception and Attitude, Role of values in formation of attitudes, attitudes and preferences, perception of preference with reference to simplicity complexity dimension of Design.
- Contextual Environment 1: Dwelling and Habitual Selection on the basis of stages in life – cycle and socio-economic status.
- Contextual Environment: Poverty and Ghettoization, with special reference to slums and JJ Colonies, Public Housing and behaviour of relocated tenants, with special reference to resettlement colonies.

**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 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.

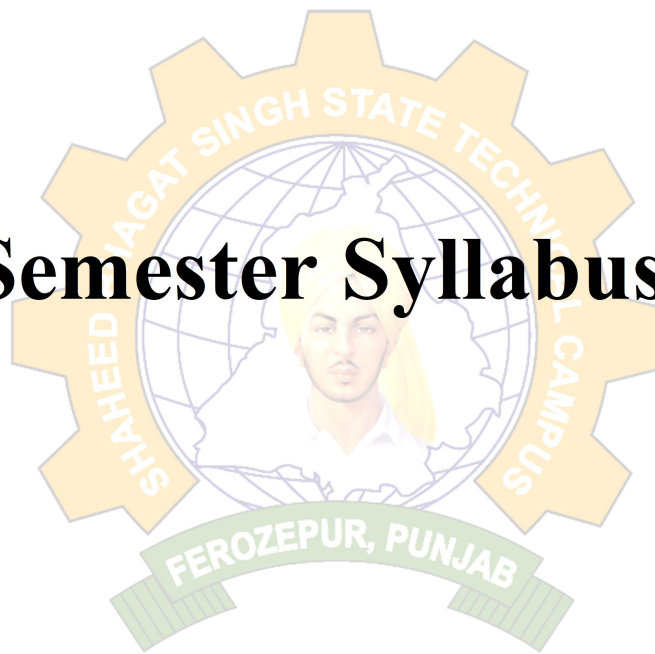
**SUGGESTED READINGS:**

- Colander, David C., Hunt, Elgin F., “Social Science - An introduction to the Study of Society”, Pub. Macmillan Publishing Company, New York 1984
- “Sociology, Anthony Giddens”, Pub. Polity Press in association with Blackwell Publishers, 1989
- Porteous, Douglas J., “Environment and Behaviour - Planning and Everyday Urban Life”, Pub. Addison Wesley Publishing Co, Branding, Massachussets, 1977.
- Advanced Reading Suggested (Reference), Rapoport, Amos (1977): Human Aspects of Urban Form, Oxford, Pergamon Press.





# **VII Semester Syllabus – 2018**



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

**Uni. Exam Marks - 150**

**Sessional Marks - 350**

**1 Full Semester**

**Credits- 18**

**INTENT:**

- To make student learn the intricacies of architecture profession by joining and working with practicing Architects/Architectural firms for one complete semester.

**Practical Training Manual:**

- The total marks shall be suitable 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 reports, office work and work done by them in the office in which they are working according to prescribed schedule. These reports should be assessed/ remarked by practical training coordinator (PTC).
- On the conclusion of the training the work done by the students should be evaluated through the viva-voce o be conducted jointly by the director/ principal/ HOD, PTC and one External Examiner, who will be appointed by the Director/ COE/ Principle.

**Work to be done by the students:**

- During training, students are required to do distinct types of work in order to make optimum utilization of the period of training.
- Work to be done during office hours:
  - a) Drafting, Tracing, sketch designs, Presentation drawings, Perspectives, models, documentation etc.
  - b) Working Drawings and details.

**DISTRIBUTION OF MARKS:**

- **University (External) marks – 150.**
- **University Viva-Voce – 100.**  
(to be conducted by the external expert appointment by the principle)
- **Marks awarded by the employer- 50.**  
(to be sent in original to the Director/ COE/ Principle)
- **Internal marks- 350.**  
(to be sent by PTC in the given format)

Roll no.	Joining reports marks	Monthly report marks	Building study report marks	Seminar presentation marks
	20	80	125	125

**EVALUATION MEATHODOLOGY:**

- Based on above guidelines a detailed programme shall be drawn each year by PTC, which should be approved by the Director/ Principal before it is implemented. The intention will be update the programme on regular basis, incorporating new details, with focus on making continuous qualitative improvement of the practical training.