

INDUS UNIVERSITY
Institute of Design
Environment and Architecture
B. Arch



COURSE OUTCOMES
NAAC-2.6.1

IDEA Vision Statement:

Institute of Design, Environment and Architecture, Indus University believes in imparting architectural education with interactive and experimental method of knowledge sharing, alongside team of innovators and collaborators, to develop new teaching methodologies to enhance relevant socio-culturally, environmentally efficient approach.

Mission:

1. To create a comprehensive learning process as a response to the practical and theoretical aspects of architecture.
2. To enhance a practice of self-learning and leadership qualities towards creating individuals with a profound understanding of the subject, its ethics and critical thinking.
3. To create a culture of questioning beliefs of the past and enquire present practices by analyzing them critically, understanding the diversity of the field.
4. Anchoring with the contemporary ideas and practices by placing itself as a body which excels itself in creative thinking, empirical research methods and technological explorations.

PSO's (Program Specific Objectives):

1. To nurture individuals towards a better understanding of learning methods to bridge gap between theory and practice.
2. To respond to innovative needs environmental and social responsibility that one should acquire towards excellence in the field both in academics and practice.
3. To develop a culture of enquiry, a thirst to excel in a particular field of knowledge and an ability to have a broad minded perspective to things.
4. To nurture an intent to unlearn and reinterpreted learning's through the change, proceeding towards efficient and sustainable response to varied situations.

PO's (Program Outcomes):

1. Imparting an understanding of complexities of different processes- the way in which subjects come together to respond in practice and relevance of each in the field.
2. Imparting a critical thinking method by which each problem is to be looked through innovative means and creative explorations.
3. Problem solving attitudes towards in varied situation through widened perspective and efficient methods; team work and collaborative abilities are to be inherited.
4. Imparting a value based learning process which further helps them to develop their work ethics and to look at their contribution to society with integrity.
5. Students will be able achieve academic excellence, professional competency, socially appropriate research and innovation in relative areas globally.
6. Student will be able to pursue further education in wide-ranging fields to enhance their interest instead of liner process of educational qualifications.
7. Student will develop entrepreneurship skills in profession to handle varied scales of project harmonizing between numerous stack holders.
8. With the skills of critical thinking and concepts, students will be able to formulate varied teaching approaches in academic setup.

TEACHING SCHEME

B. Arch - Academic Year 2019-20

S No	Module Code	Name of the Module	Prerequisite	Periods			Evaluation Scheme		Total	Credit	Theory Exam - Duration	
				Studio/ Practical	Theory/ Lecture	Workshop/ Seminar/ Tutorial/ Interaction	Total Hours	Internal	External			100
1	AR 0101	SKILL MODULE 1	NA	53	15	15	83	50	50	100	5	2 HOURS
1	AR 0102	DESIGN PROCESS 1	NA	53	15	15	83	50	50	100	5	NA
1	AR 0103	TECHNICAL MODULE 1	NA	40	35	25	100	50	50	100	6	2 HOURS
1	AR 0104	THEORY MODULE 1	NA	10	20	15	45	50	50	100	2	2 HOURS
1	AR 0105	DESIGN PROJECT 1	NA	36	18	36	90	50	50	100	4	NA
1	AR 0106	COLLABORATIVE PROGRAM 1	NA					50	50	100	3	NA
TOTAL				401				600		25		
2	AR 0201	SKILL MODULE 2	NA	60	20	10	90	50	50	100	6	2 HOURS
2	AR 0202	DESIGN PROCESS 2	NA	30	10	20	60	50	50	100	4	NA
2	AR 0203	TECHNICAL MODULE 2	NA	40	30	20	90	50	50	100	6	2 HOURS
2	AR 0204	THEORY MODULE 2	NA	10	20	15	45	50	50	100	2	2 HOURS
2	AR 0205	DESIGN PROJECT 2	NA	40	25	35	100	50	50	100	4	NA
2	AR 0206	COLLABORATIVE PROGRAM 2	NA					50	50	100	3	NA
TOTAL				385				600		25		
3	AR 0301	SKILL MODULE 3	NA	30	15	0	45	50	50	100	3	NA
3	AR 0302	DESIGN PROCESS 3	AR 0102	30	10	20	60	50	50	100	3	NA
3	AR 0303	TECHNICAL MODULE 3	AR 0103	70	55	35	160	50	50	100	8	2 HOURS
3	AR 0304	THEORY MODULE 3	NA	10	20	10	40	50	50	100	2	2 HOURS
3	AR 0305	DESIGN PROJECT 3	AR 0105	40	25	35	100	50	50	100	6	NA
3	AR 0306	COLLABORATIVE PROGRAM 3	NA					50	50	100	3	NA
TOTAL				405				600		25		
4	AR 0401	SKILL MODULE 4	NA	40	25	0	65	50	50	100	3	NA
4	AR 0402	DESIGN PROCESS 4	AR 0202	30	10	20	60	50	50	100	3	NA
4	AR 0403	TECHNICAL MODULE 4	AR 0203	65	50	35	150	50	50	100	8	2 HOURS
4	AR 0404	THEORY MODULE 4	NA	10	25	20	55	50	50	100	2	2 HOURS
4	AR 0405	DESIGN PROJECT 4	AR 0205	90	35	50	175	50	50	100	6	NA
4	AR 0406	COLLABORATIVE PROGRAM 4	NA					50	50	100	3	NA
TOTAL				505				600		25		
5	AR 0501	SKILL MODULE 5	NA	40	25	0	65	50	50	100	2	NA
5	AR 0502	DESIGN PROCESS 5	AR 0302	30	10	20	60	50	50	100	2	NA
5	AR 0503	TECHNICAL MODULE 5	AR 0303	71	55	38.5	164.5	50	50	100	8	2 HOURS
5	AR 0504	THEORY MODULE 5	AR 0304	10	25	15	50	50	50	100	2	2 HOURS
5	AR 0505	DESIGN PROJECT 5	AR 0305	90	35	50	175	50	50	100	8	NA
5	AR 0506	COLLABORATIVE PROGRAM 5	NA					50	50	100	3	NA
TOTAL				514.5				600		25		
6	AR 0601	SKILL MODULE 6	NA	40	25	0	65	50	50	100	2	NA
6	AR 0602	DESIGN PROCESS 6	AR 0402	30	10	20	60	50	50	100	2	NA
6	AR 0603	TECHNICAL MODULE 6	AR 0403	66	60	38.5	164.5	50	50	100	8	2 HOURS
6	AR 0604	THEORY MODULE 6	AR 0404	8	20	12	40	50	50	100	2	2 HOURS
6	AR 0605	DESIGN PROJECT 6	AR 0405	90	35	50	175	50	50	100	8	NA
6	AR 0606	COLLABORATIVE PROGRAM 6	NA					50	50	100	3	NA
TOTAL				504.5				600		25		

7	AR 0701	OFFICE TRAINING	NA	NA	NA	NA	NA	500	100	600	25	2 HOURS
TOTAL			600 25									
8	AR 0801	SKILL MODULE 8	NA	0	42	12	54	50	50	100	2	2 HOURS
8	AR 0803	TECHNICAL MODULE 8	NA	10	66	14	90	50	50	100	6	2 HOURS
8	AR 0804	THEORY MODULE 8	NA	8	20	12	40	50	50	100	2	2 HOURS
8	AR 0805	DESIGN PROJECT 8	NA	43	27	38	240	50	50	100	12	NA
8	AR 0806	COLLABORATIVE PROGRAM 8	NA					50	50	100	3	NA
TOTAL			424 500 25									
9	AR 0901	SKILL MODULE 9	NA	0	42	12	54	50	50	100	2	2 HOURS
9	AR 0903	TECHNICAL MODULE 9	NA	10	66	14	90	50	50	100	2	2 HOURS
9	AR 0904	THEORY MODULE 9	NA	8	20	12	40	50	50	100	4	2 HOURS
9	AR 0905	DESIGN PROJECT 9	NA	43	27	38	280	50	50	100	14	NA
9	AR 0906	COLLABORATIVE PROGRAM 9	NA				0	50	50	100	3	NA
TOTAL			464 500 25									
10	AR 1001	DESIGN / RESEARCH THESIS	NA	NA	NA	NA	NA	400	100	500	25	NA
TOTAL			500 25									
3,5,9	AR 0307	VERTICAL DESIGN STUDIO	AR 0105	90	35	50	175	50	50	100	6,8,14	NA
4,6,8	AR 0407	VERTICAL DESIGN STUDIO	AR 0205	90	35	50	175	50	50	100	6,8,12	NA
GRAND TOTAL			5700 250									

IMPORTANT NOTES

- From 2017-18 academic year onwards, minimum internal passing marks are 22.5 marks.
- From 2017-18 academic year onwards, prerequisite for appearing in External exam/jury/viva is getting minimum internal passing marks.
- From 2017-18 academic year onwards, minimum external passing marks are 22.5 marks.
- From 2017-18 academic year onwards, minimum total passing marks (internal + external) are 50 marks.

List of Elective Courses

Following Courses (included in the Teaching Scheme) are offered as Elective Courses:

AR 0106 - Collaborative Program 1
 AR 0206 - Collaborative Program 2
 AR 0306 - Collaborative Program 3
 AR 0406 - Collaborative Program 4
 AR 0506 - Collaborative Program 5
 AR 0606 - Collaborative Program 6
 AR 0806 - Collaborative Program 8
 AR 0906 - Collaborative Program 9

INDUS UNIVERSITY, AHMEDABAD

COURSE OUTCOME

Academic Year-2019-20

SEMESTER-I

SKILL MODULE 1 – AR0101

Course Outcomes

1. To Understand the use of basic tools for drawing, sketching and drafting
2. To sketch well and quickly.
3. To enhance the ability to understand the whole to part and part to whole relationship.
4. To develop muscle memory
5. Objective is to train the hand-eye coordination of students with manual and computing skills.

DESIGN PROCESS MODULE 1 – AR0102

Course Outcomes

1. Students will understand design thinking and lateral thinking
2. To cultivate design thinking and solution-centric approaches
3. Developing insights and intuitions in everyday situations

TECHNICAL MODULE 1 – AR0103

Course Outcomes

1. To understand the basic need of a structure.
2. To identify various structures and their typologies
3. To understand basic materials used for making structures
4. To understand skills and techniques required for brick and stone masonry
5. To introduce students to understanding of basic construction materials and structures
6. To understand bricks and stones as construction materials
7. To understand their properties, bonds and masonry techniques
8. To understand structures via their load grounding methods

THEORY MODULE 1 – AR0104

Course Outcomes

1. To understand and appreciate their assumptions about culture
2. To recondition their thinking about the role of culture plays in design
3. To instill the human/e and cultural aspects in environmental decision making processes and the aesthetics of the place of design

DESIGN PROJECT 1 – AR0105

Course Outcomes

1. To be able to accomplish compositions with a good quality drawings and models
2. To instruct the student over why certain things appear pleasing to some and not all
3. To inculcate students with clear expression of their thoughts and ideas
4. To develop sensitivity about application of various terms in architecture, space and perception
5. To understand qualitative and psychological aspects of different activities and assign appropriate quantitative value and design them in a rational manner

SEMESTER- II

SKILL MODULE 2 – AR0201

Course Outcomes

1. Generate better ability for observation and analysis for understanding architecture, climate and culture.
2. Objective is to explore different medium to express tectonic qualities of light and shadow, reflection, texture.
3. Alternative techniques of presentation

DESIGN PROCESS 2 – AR0202

Course Outcomes

1. Students will be able to analyze geometry of paintings and architecture through drawings, models and site visit
2. Sketching trees, landscape, monuments and understanding their logics of growth, connections and details
3. Converting experience and journey into photomontage
4. To develop skill of model making

TECHNICAL MODULE 2 – AR0203

Course Outcomes

1. Understand the building system individually and as a whole
2. Introduce to sequence of construction and assembly as the method of construction.
3. Understanding of integration of three building systems: structural, enclosure, services
4. Different methods of categorization of structural system
5. Understanding of structural systems based on mechanism of transfer of load

THEORY MODULE 2- AR 0204

Course Outcomes

1. To understand meaning of elements and correlation of each evolution of elements
2. socio- cultural aspects of space making

DESIGN PROJECT 2- AR 0205

Course Outcomes

1. To understand representational techniques and communicative intend of each
2. Context in relation to site conditions
3. Narrative towards programmatic interpretation and use of space
4. Built and its relation to outside
5. organization principles of space making

SEMESTER III

SKILL MODULE 3- AR 0301

Course Outcomes

1. To understand representational techniques and communicative intend of each
2. Alternative techniques of presentation
3. Composition and principles of basic design
4. Understanding of three dimensional visualization through software
5. Through techniques it helps them to basics of design principles and compositions.
6. Looking towards the techniques of representation help structure and communicate experiential and intangible aspects of architecture.

DESIGN PROCESS 3- AR 0302

Course Outcomes

1. To understand approaches and process to design
2. Alternative techniques of presentation
3. Design principles and impact of constraints on that
4. Analysis through a given frame
5. basics of design principles and to understand diverse methods to approach a design

TECHNICAL MODULE 3- AR0303

1. Load bearing system, column frame, composite, shell structures, geodesic domes etc. - advantages, disadvantages, of all of these systems.
2. Foundation types, plinth beams, ground beams, earthworks - excavation, backfilling, DPC etc.
3. Wall systems - brick bonds, wood walls, steel walls, arches and openings etc
4. Centre of gravity, moment of inertia, its application to sections subjected to bending.
5. Concept of triangulation and its application in pin jointed trusses.
6. Assumption in strength of materials, basic terminology.
7. Concept and importance of shear force and bending moment. Pure bending stress and combined direct and bending stress.
8. Stability, buckling of columns, short and long columns
9. Concept of shear stress, average and maximum shear stresses
10. Understanding of Climate and its impact on architectural design,
11. Fundamentals of climatology and environmental studies.
12. Understanding of Landscape elements like trees, shrubs, plants, water, rocks and
13. Development of landscape planning and application in architectural design.

THEORY MODULE 3- AR0304

Course Outcomes

1. Understanding Scale and Proportion of both religious and Secular typology in built form of Islamic architecture
2. Enabling students to present their concepts of design by verbal and written communication techniques
3. Exercises based on the topic of form generation to develop the understanding of correlation

4. of modules— parts to whole, and whole to parts—on the parameters of scale, proportion, grid, climate, and material
5. Understand the evolution of Muslim architecture to Indo- saracenic Architecture

DESIGN PROJECT 3- AR 0305

Course Outcomes

1. Expression through manifestation of elements in relation to the studio concerns
2. Appropriate response to the overall structure and reasoning
3. Understanding of complexities of each step in the process of resolution
4. Understanding of meaning of space and its response to the forces
5. Develop an architectural program and design for people in the context of the cultural milieu of places to which they belong.
6. To understand traditional approaches to built forms responding to the culture, climate and the terrain and interpret them architecturally in a contemporary context.

SEMESTER IV

SKILL MODULE 4 – AR 0401

Course Outcomes

1. Students will learn how to speak to inspire, do hand drawings, and learn AutoCAD and sketch up more in detail
2. Through computer CAD techniques, students learn to correctly use the software to represent the construction details and drawings.
3. To express oneself freely via verbal communication, 2d and 3d drawings to get into the habit of reading and forms one's own views in topics of current affairs.
4. To understand the real meaning of drawings as tools of communication.
5. To explore hand drawing skills as well as computer aided drawings and 3d modeling soft wares.

TECHNICAL MODULE 4

Course Outcomes

1. Understanding of assembly as a method of construction
2. Explorations of connections within the members – understanding the case: toilet/ staircase /roof – floor.
3. Understanding of technical knowhow pertaining to materials and their assembly and its relevance to architectural expression.

THEORY MODULE 4

Course Outcomes

Students will explore concepts of Climate, Materiality, Typology and Order (Vitruvius and Palladio) in monumental and domestic architecture and old towns

Course outcomes and program outcomes mapping

Students will explore concepts of Climate, Materiality, Typology and Order (Vitruvius and Palladio) in monumental and domestic architecture and old towns.

Students will have a fresh understanding of materiality and design and will make three dimensional mock-ups

DESIGN PROJECT4- AR 0405

Course Outcomes

1. Purpose, meaning and expression of a given material for the given plug-in to an existing building in Ahmedabad by an in depth understanding of the material in its raw, manufacturing, assemblage, construction and architectural expression across various scales.
2. To study the properties of materials across a broad material palette and use the same by designing a plug-in in terms of retrofitting, extension, adaptive reuse of what are considered to be architectural heritage buildings of Ahmedabad.

SEMESTER -V

SKILL MODULE 5- AR0501

Course Outcomes

1. Introducing hands-on and digital skills for processing static and kinetic images.
Students will explore various mediums in documenting information.
2. Understanding Scale and Proportion of multiplicity by the concept of Modularity
3. Enabling students to present their concepts of design by verbal and written communication techniques
4. Being well versed with various representation and rendering techniques
5. Enabling 3D visualisation of module clusters through ArchiCAD

DESIGN PROCESS MODULE 5- AR0502

Course Outcomes

1. Knowledge of design principles and elements in residential architecture, understanding of housing functions as generator for architectural expressions and knowledge of current questions related to housing design.
2. Housing design skills.
3. General competence in design methods, materiality and detailing.
4. Basic housing design skills based on the knowledge acquired in the studio. Emphasis is on dwelling quality, quality of housing areas, as well as the ability to present architectural ideas in drawings and models.
5. General competence in design methods, construction principles, building materials, and detailing.

TECHNICAL MODULE 5- AR0503

Course Outcomes

1. Students will develop the understanding of philosophy of structural design of three materials and its application in architectural design.
2. Comprehensive understanding of all the components of door window systems and toilet systems.
3. Students are able to work out typical details for openings
4. Comprehend the drawings of site and services

THEORY MODULE 5- AR 0504

Course Outcomes

1. To understand abstraction and meaning through elements
2. Interpretations of geometry
3. Impact of technological and social change towards architecture
4. Impact of art and concerns of architectural education
5. Different interpretations of ideologies and their manifestation

DESIGN PROJECT MODULE 5- AR0505

Course Outcomes

1. Knowledge about the role of housing in society.
2. Knowledge of design principles and elements in residential architecture, understanding of housing functions as generator for architectural expressions and knowledge of current questions related to housing design.
3. Housing design skills.
4. General competence in design methods, materiality and detailing
5. Basic housing design skills based on the knowledge acquired in the studio. Emphasis is on dwelling quality, quality of housing areas, as well as the ability to present architectural ideas in drawings and models.

SEMESTER - VI

SKILL MODULE 6 – AR0601

Course Outcomes

1. Through computer CAD techniques, students learn to correctly use the software to represent the construction details and drawings
2. Students will learn how to represent various materials and methods in construction in drawings and models.
3. To explore interdependence of part and whole relationship in 2D and 3D
4. Classification, description and sequence of components in construction.
5. Composing and text formatting – Portfolio/Publications.

DESIGN PROCESS 6 – AR0602

Course Outcomes

1. Understanding the holistic theory to conceptualize larger goals and work out details
2. Students will have a fresh approach for detailing of a previous design
3. The relationship between parts and the whole they make, in the design
4. Studying the role of details in the architecture of repute
5. To understand the process of making, articulation and expression of material through architectonics.

TECHNICAL MODULE 6 – AR0603

Course Outcomes

1. Ability to understand the structural and technical details of the skin of the building through wall sections of different conditions
2. Understanding of all the technical aspects of a project
3. Accurate and detailed preparation of working drawings
4. Structural resolution in plan and wall sections of the studio design project

THEORY MODULE 6 – AR0604

Course Outcomes

1. Students will develop insights and understanding for contemporary designs and details
2. Studying the theories and context of Modernism, Post-modernism and subsequent architectural styles
3. Students will gain deeper insight into the contemporary trends to reassess their conceptual frameworks

DESIGN PROJECT 6 – AR0605

Course Outcomes

1. Making large size mock-ups and drawings
2. Getting to know detailed construction and finishing related to buildings
3. Knowledge of specifications for an efficient execution of design
4. Focus on materials, building services, construction systems, and their integration in design

SEMESTER -VII

AR 0701 Office Training

Course Outcomes

1. Exposing students to the environment of professional practices for the period of 100 working days

SEMESTER - VIII

SKILL MODULE 8-AR 0801

Course Outcomes

1. Urban mapping
2. Observation of activity, people, city form
3. Translation of observations in to mapping
4. Working with software to essential data process
5. To document intangible aspects of the community
6. Presentation of case-studies, three dimensional models of large scale replicas

TECHNICAL MODULE 8 - AR 0803

Course Outcomes

1. Basic understanding of structural systems through different material.
2. Study of advanced building construction methods and innovative architectural detailing
3. Study of office practices, Office administration, Accounting,
4. Knowledge about Building Bye-laws, Tendering, Contracts and Arbitration, Valuation, Professional conduct and ethics,
5. Architects Act 1972, Role of COA, IIA and UIA, Implementing a building contract.

THEORY MODULE 8 - AR 0804

Course Outcomes

1. Students will have a deeper understanding about old cities
2. Better insight for making urban interventions based upon developed theoretical understanding of urban/peri urban situations.
3. Studying the theories and context of urban situations
4. Knowledge about structure of the cities

DESIGN PROJECT 8 - AR 0805

Course Outcomes

1. Understand the tangible and intangible challenges of building within a (dense) urban context and develop the program and design addressing these.
2. Decipher the embedded knowledge within the existing built typology(ies)
3. Design of new or upgraded infrastructure in a neighborhood responsive to the context of a new urban area or in an old city fabric or a heritage precinct

Semester 9

SKILL MODULE 9 – AR 0901

Course Outcomes

1. Methods of representing city and various aspects of it through illustration
2. Students will take an overview of issues and trends relevant to the campus and the subjects selected by them for their final year dissertation
3. Ability to read and critical evaluate academic writing
4. Writing a thesis proposal

TECHNICAL MODULE 9 – AR 0903

Course Outcomes

1. In-depth understanding of all components of building services like types of HVAC systems, AHU, chillers, cooling towers, supply return and fresh air ducts, & grills
2. Knowledge and functioning of inverter, UPS, power controls, power distribution system in a building etc
3. Exploration into construction details and integration of services.
4. Creating actual tensile structures (to the scale) using tensile fabric and other relevant materials

THEORY MODULE 9 – AR 0904

Course Outcomes

1. Studying the theories and context of Modernism, Post-modernism
2. Study of early 20th century art movements
3. Design philosophy of the master architects

DESIGN PROJECT 9 – AR0905

Course Outcomes

1. Understand the site and programme in a larger context of its place in the city and global and ecological dimension
2. Redefine the nature of architectural programme in order to future-proof their proposal
3. Student will begin to think of architectural design in the larger context of global trends and social reality
4. Make working prototypes with details in drawings and models.

SEMESTER 10

DESIGN / RESEARCH THESIS - AR 1001

Course Outcomes

A Major project selected by the students in the area of their interest and attempted after detailed analytical study of the chosen topic/ subject.

1. Student will contemplate and tune their design language
2. Create a socially and ecologically responsive architecture
3. Present a theoretical finding related to society and built environment
4. document works of architectural and historic significance