GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

Programme	Bachelor of Architecture	Branch/Spec.	INSTITUTE OF ARCHITECTURE
Semester	II	Version	1.0.0.0
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015
Subject code	IIA01ADS	Subject Name	Architecture design Studio – II

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	-	-	6	-	6	Theory	-	-	-
Hours	-	-	6	-	6	Practical	360	240	600

Pre-requisites:

Space and Sensory stimuli. Visualizing the space for the various activities of day to day life for standard space. To transfer the knowledge of anthropometrics with the sense of proportion to create the various space.

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	Understanding of the human figure as the unique standard of measure in architecture. Correspondence between parts of human body and experience of the designed environment. The body in motion, patterns of dimension/patterns of movement, rhythms repetition of bodily dimensions. Ergonomics/behavior/dimension.	
2	Study of relationship of human body to those objects that make up the environment. Investigation in the concepts of size, scale and proportions\ in architecture.	

Practical content

Mapping and analyzing human movement in small concept spaces. An Exercise for creating one space for a defined function considering human space and objects. Exercise for creating more than one space for prescribed users of a residential unit considering day to day activity in relation to the life style.

Text Books

1	

Reference Books

1	Poetics of Architecture-Anthony C. Antoniades.
2	Form, Space & Order-Francis D.K. Ching .
3	Experiencing Architecture-Steen Eiler Rasmussen.
4	Design in Architecture –Geoffrey Broadbent.
5	Scale in Architecture - Frank Orr.
6	A Pattern language- Christopher Alexander.
7	Architecture and its interpretation -Juan Bonta.

GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

Programme	Bachelor of Architecture	Branch/Spec.	INSTITUTE OF ARCHITECTURE
Semester	II	Version	1.0.0.0
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015
Subject code	IIA02BOD	Subject Name	Basics of Design – II

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	-	-	4	-	4	Theory	-	-	-
Hours	-	-	6	-	6	Practical	240	160	400

Pre-requisites:

Study of Design principle in natural and manmade environment, Learning from Nature 1: forms, Evolution and Process. To develop the perceptions towards using the basic principles of aesthetics which can be useful to create a built form.

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	Study of Natural forms. Analysis and transferring in terms of geometry, structure, material, color, evolution, comparison and abstraction of such in manmade designs. A 3D pattern, shape and form with solid and voids.	
2	Observing and analyzing the natural objects and transferring into manmade patterns.	

Practical content

Series of exercise for preparing the abstract compositions with textures and colors reflecting the principles of aesthetics. Preparing the 3D compositions using the different materials like wood, steel, POP to express in reflect of the perception.

Text Books

1	NA

Reference Books

1	Ways of Seeing - John Berger.
2	Art in Everyday Life- Harriet Goldstein.
3	Architecture Scale & Proportion - Eugene Ruskin.
4	What is Design- Paul Grille.
5	The Nature of order- Christopher Alexander.
6	Design by Nature - Maggie Macnab.
7	Decoding Design - Maggie Macnab.
8	Geometry in Nature - John Blackwood.

GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

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Semester	II	Version	1.0.0.0
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015
Subject code	IIA03TRD	Subject Name	Technical Representative Drawings- II

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	-	-	3	-	3	Theory	-	-	-
Hours	-	-	6	-	6	Practical	180	120	300

Pre-requisites:

Developing skills for representation of geometric forms and compositions as a tool of design.

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	Understanding of multi- view drawing system. Orthographic projection of, lines. Planes and solids. Perspective: One-Point & Two-Point.	
2	Projecting from Plan & Elevation, Projecting from Plan only, Basic Introduction of -Photoshop/ Google sketch up/AutoCAD.	

Practical content

Drawings and models based upon the above syllabus

Text Books

1	NA

Reference Books

1	Engineering Drawing -N.D. Bhatt
2	Graphic Thinking for Architects and Designers - Paul Leaseua
3	Graphics in Architecture-Ching, Francis D. K.
4	Visualization Techniques- Richard B.Leinbach
5	Rendering with Pen & Ink - Robert Gill.
6	Perspective for Architects - Themes & Hadson
7	Perspective & Sciography – Shankar Mulik

GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

Programme	Bachelor of Architecture	Branch/Spec.	INSTITUTE OF ARCHITECTURE
Semester	II	Version	1.0.0.0
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015
Subject code	IIA04BCD	Subject Name	Building Construction & Details- II

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	-	-	3	-	3	Theory	-	-	-
Hours	-	-	4	-	4	Practical	180	120	300

Pre-requisites:

Understanding different construction techniques for chosen materials, building elements and composite architecture. Elements; Arches and Lintels, Workmanship; Timber and Flooring.

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	Building Elements: a. Arches: Definition, General Forms, Types of Arches, Classification of Arches as per shape, center and workmanship, Stability. b. Lintels & weather sheds: Function and use, materials used in it.	
2	Timber Carpentry & Joinery : Terms, Principles of Joinery, Classification of joints, Widening joints, Angle and Oblique Joints, Fastenings, Tools used.	
3	Flooring –Finishes & details : Types of Floor finishes, Factors affecting choice of flooring materials, Case examples.	

Practical content

Lectures on basic construction of building. Studio exercises and case studies. Study of various contents of existing building through sketches & models. Site Visits: Gujarat College, IIM, Old Historical Buildings, Ongoing Flooring Site.

Text Books

1	NA

Reference Books

1	Construction of Building Vol.-I- R.Berry
2	Building Construction Metric Vol.-I to IV- W.B.Mckay
3	Construction Technology Vol.-I-Chudley
4	Building Construction Illustrated-FransisD.K.Ching.

GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

Programme	Bachelor of Architecture		Branch/Spec.	INSTITUTE OF ARCHITECTURE	
Semester	II		Version	1.0.0.0	
Effective from Academic Year	2015-16		Effective for the batch Admitted in	June 2015	
Subject code	IIA05BM	Subject Name	Building Material- II		

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	120	80	200
Hours	2	-	-	-	2	Practical	-	-	-

Pre-requisites:

Advanced materials used in construction of Buildings.

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	Cement, Concrete & R.C.C. Ferro cement. Metal - ferrous and non – ferrous - iron, steel, market forms of steel, aluminum, copper. Composite materials.	
2	Glass-types of glass & their properties. P.v.c., fiber glass, poly carbonate and various plastic products. Recycled material.	

Practical content

Text Books

1	Engineering Materials – S.C. Rangwala (course book)

Reference Books

1	Building Materials – B.C. Punamia (Additional Reference)
2	Time Savers Standards – Building Materials and Systems – Donald Watson (Advanced)

GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

Programme	Bachelor of Architecture	Branch/Spec.	INSTITUTE OF ARCHITECTURE
Semester	II	Version	1.0.0.0
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015
Subject code	IIA06HOA	Subject Name	History of Architecture - II

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	120	80	200
Hours	2	-	-	-	2	Practical	-	-	-

Pre-requisites:

An introductory chronological understanding of the entire history of Architecture since its inception to present day in reference to various aspects that brought about the evolution.

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	The triggers in technological evolution through the perspective of representation of material and understanding. The history of Architecture in reference to 'spanning', technological breakthroughs in various materials, social, economic, political and other developments. The resultant built forms.	
2	Variations in material expression peculiar to regions. Individual exploration by architects in the same direction. Introduction of –Mesopotamian civilization, Ancient Indian civilizations– Indus valley civilization, Vedic village civilization, Buddhist Architecture, Rock cut architecture, Temple architecture, Islamic architecture.	

Practical content

Lectures, Presentations, Movies, Discussions and Debates based upon the above syllabus

Text Books

1	

Reference Books

1	A History of Architecture - Sir Bannister Fletcher.
2	Architecture: From Pre-history to Post-Modernity, Marvin Trachtenberg, Isabelle Hyman
3	Graphic History of Architecture. – John Mans bridge.
4	Architecture Through the Ages – Talbot Hamlin.
5	Encyclopedia of Architecture - Joseph G wilt.
6	History of Architecture, Settings and Ritual Kost of, Spiro.

GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

Programme	Bachelor of Architecture		Branch/Spec.	INSTITUTE OF ARCHITECTURE	
Semester	II		Version	1.0.0.0	
Effective from Academic Year	2015-16		Effective for the batch Admitted in		June 2015
Subject code	IIA07STR	Subject Name	Structure - II		

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	120	80	200
Hours	2	-	-	-	2	Practical	-	-	-

Pre-requisites:

Simple Stress – strain, Shear force & Bending moment diagram

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	Simple stresses & strain: Introduction, behavior of material under loading, stress & strain due to axial force, Hook's law, working stress, Ultimate stress, factor of safety, permissible stress, lateral strain.	
2	Shear force & Bending moment diagram for Determinate Beams : Introduction to shear force, bending, calculation of Shear force & bending moment for beams subjected to various types of load combination i.e. point load, distributed load with various support condition like simply supported, overhanging, Cantilever etc. Relationship between bending moment & shear force diagram, Determination of point of contra flexure, Application of Shear force & bending moment diagram.	
3	Distributed forces : Determination of Centroid, Calculation of Centre of gravity for line & area element, calculation of Moment of inertia of area element, use of parallel axis theorem.	
4	Analysis of Column : Theory of column under axial loading, behavior of column, Slenderness ratio, short, medium & long column, buckling of column, effective length, Calculation of load caring capacity using Euler's & Rankine's formula.	

Practical content

Tutorial based on course contents. Making of models based on- stability & load transfer concept. Creative exercise based on course content.

Text Books

1	NA

Reference Books

1	A text book of strength of materials- R.K. Bansal.
2	Engineering Mechanics, Statics and Dynamics-Desai &Mistry.
3	Seeking Structure from Nature- Jeffrey Cook.
4	Structural Concepts and Systems for Architecture & Engineers -T.Y.Lin.
5	Elements of Structure - Morgan

GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

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Semester	II	Version	1.0.0.0
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015
Subject code	IIA08SUR &LEVL	Subject Name	Survey & Levelling - I

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	120	80	200
Hours	2	-	-	-	2	Practical	-	-	-

Pre-requisites:

Introduction of subject, basic terms, definition and terminologies. Classification and Division of survey, units of measurements.

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	Chain Surveying: Linear measurement, principle of chain surveying, frame work, instruments used, field work. Compass Survey: Introduction to traversing, principle used, types of meridian, WCB & RB system. Plane Table Survey: Underlying principle, orientation techniques, Instruments used in plane table surveying, radiation, intersection, and traversing& resection methods, plotting in field.	
2	Methods of Area Measurements: Introduction to various methods of measuring area between chain line & boundary, calculation of area using trapezoidal & Simpson's formula, use of plannimeter to calculate area. Other approximate methods.	
3	Introduction to Leveling & Contour: (Major Study and live Case study on Contour site). Introduction to leveling & RL, How to get the RL. Understanding of contours, basic characteristics & uses of contour, study of contour map- identification of ridge line, valley line, etc. Calculation of volume for cutting & filling using contour map.	
4	Introduction to Total station: Introduction to the instrument & working methodology. Setting out of Building : (Major Study and live Case study on site). Setting out of building on the ground- Methods for setting out buildings by horizontal and vertical control.	

Practical content

Plotting of building, boundary and other physical details like trees, pole etc. by chain survey, compass survey, plain table survey. Area measurement by plannimeter& other methods. Study of contour map and earth work calculation. Site visit for setting out building on ground.

Text Books

1	NA

Reference Books

1	Surveying &Levelling, Dr. B. C. Punamia

2	Surveying & Levelling , Kanetkar and Kulkarni
3	Surveying- Arora

GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DEISGN & PLANNING

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Semester	II	Version	1.0.0.0
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015
Subject code	IIB09 WS/ELE	Subject Name	Workshop/Elective- II

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	-	-	2	-	2	Theory	-	-	-
Hours	-	-	6	-	6	Practical	120	80	200

Pre-requisites:

Materials based workshops. Exploration of materials, presentation and model making techniques.

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	Lino cut Printing, Miniature Sculpture, Photography, Model Making, Paper art.	

Practical content

Text Books

1	NA

Reference Books

1	Models from various above mentioned materials to explore and understand the basics of materials.
2	

GANPAT UNIVERSITY

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Semester	II				Version	1.0.0.0		
Effective from Academic Year		2015-16			Effective for the batch Admitted in			June 2015
Subject code	IIA10SP	Subject Name			Summer Programme			
Teaching scheme					Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)	Total		CE	SEE	Total
	L	TU	P	TW				
Credit	NA				Theory	NA		
Hours	1 Week Case Study				Practical	ATTENDANT/ NOT ATTENDANT		

Pre-requisites:

Learning Outcome:

Theory syllabus

Unit	Content	Hrs
1	This summer workshop aims at creating understanding of inherent form and order in the built environment by observing it and analyzing by sketching and measure drawing. Hand sketch also gives an opportunity to students for examining the systems, scale and architectural language of the built.	

Practical content

Text Books

1	NA

Reference Books

1	NA
2	NA