

GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus For B.Plan

FIRST SEMESTER (W.E.F. JUNE 2014)

Name of the Subject: Fundamentals of Urban and Regional Planning		
Subject Code: 1015501		
Aim: To study the Concepts and Principles of Urban and Regional Planning.		
Objective:		
1.	To understand the Rationales and Foundations of Planning.	
2.	To introduce the Hierarchy of Development Plans and Planning Process; and Theories of Urbanization.	
Pre-Requisites: --		
Contents		Hours
Unit - 1	Definitions and Rationales of Planning: Various definitions of town and country planning; Goals and objectives of planning; Components of planning; Benefits of planning; Arguments for and against planning.	8
Unit - 2	Foundations of Planning: Orthodoxies of planning including the Lamps of Planning; Sustainability and rationality in planning; Components of sustainable urban and regional development; Defining what counts as planning knowledge: various sources of planning knowledge, various forms of planning knowledge; Reasoning and its various forms in planning; Space, place and location	16
Unit - 3	Development Plans and Development Regulations: Definition of development plan; Types of development plans: master plan, city development plan, structure plan, district plan, action area plan, subject plan, town planning scheme, regional plan, sub-regional plan; Planning Advisory Group report and the UDPFI Guidelines; Sector plans and spatial plans; Defining development and development control regulations, types of development control; Implications of violations of development control regulations; Conforming and Nonconforming land uses; Compatible and non-compatible land uses, LULU and NIMBY	12

Unit - 4	Governance of Planning: Local government in India; District Planning Committees and Metropolitan Planning Committees; Introduction to Internationalization and globalization of planning: meanings and forms of globalization; Characteristics of a global city; Principles for planning for a global city.				12
Unit - 5	Theories of Urbanization: Theories of urbanization including Concentric Zone Theory; Sector Theory; Multiple Nuclei Theory and other latest theories; Land Use and Land Value Theory of William Alonso; City as an organism: a physical entity, social entity and political entity				16
Text / Reference Books:					
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher	
1.	Faludi, A.	A Reader in Planning Theory	-	Pergamon Press, Oxford.	
2.	Faludi, A.	Planning Theory	-	Pergamon Press, Oxford.	
3.	Keeble, L.	Principles and Practice of Town and Country Planning	-	The Estate Gazette, London.	
4.	McLoughlin, J.B.	Urban and Regional Planning:	-	Faber and Faber, London.	
		A System Approach			
5.	McLoughlin, J.B.	Control and Urban Planning	-	Faber and Faber, London.	
6.	Hall, P.	Urban and Regional Planning	Fourth	Routledge, London.	
7.	Freidmann, J.	Planning in the Public Domain	-	Princeton University Press, Princeton.	
8.	Fainstein, S.S. and Campbell, S.	Readings in Planning Theory	-	Mackwell.	
List of Exercises / Practicals:					
1	Visit to Local Bodies / Development Authority and submit report.				
List of Assignments/Tests:					
1	Test on Unit 1 and Unit 2.				
2	Case study based Assignment on Unit 3 or Unit 4.				

Name of the Subject: Fundamentals of Building Structures				
Subject Code: 1015502				
Aim: To study Fundamentals of Building Structures.				
Objective:				
1.	To introduce the Definitions of Basic Terms of Building Structure.			
2.	To understand Structural Components in detail.			
Pre-Requisites: --				
Contents				Hours
Unit -1	Compression and Tension Forces of compression and tension, concept of equilibrium forces and conditions of equilibrium, concept of elasticity and plasticity, Hooke’s law, stress – strain relationship of tension and compression			8
Unit -2	Components Different types of foundation, Analysis of Trusses soil structure interaction and columns and struts, short and long columns			6
Unit - 3	Beams Beams and bending, various types of beams and their behavior			6
Unit - 4	Design Principles Design principles of RCC beams and slabs. Construction system: reinforced concrete, pre-stressed concrete and prefab system and modular co-ordination			6
Unit - 5	High Rise Structures Load action and high rise buildings, various structural systems for high rise buildings			6
Text / Reference Books:				
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	James Ambrose	Building Structures	Second	Wiley
2.	Edward Allen, Joseph Ians	Fundamentals of Building Construction: Materials and Methods	2008	John Wiley & Sons
3.	Michael Montoya	Green Building Fundamentals	2008	Prentice Hall
List of Exercises / Practicals:				
1	Field visit to the large building construction site and submit the Report.			
List of Assignments/Tests :				
1	Test on Unit 1 and Unit 2.			
2.	Assignment on Unit 3 or Unit 4 or Unit 5.			

Name of the Subject: Materials and Principles of Construction				
Subject Code: 1015503				
Aim: To study Building Materials and Principles of Construction of Buildings and Site Development.				
Objective:				
1.	To study Building Materials and understand about the Principles of Construction.			
2.	To study Principles of Site Development and Services Network.			
Pre-Requisites: --				
Contents				Hours
Unit 1	Introduction to Building Materials and Finishes Brick, timber, stone, cement, lime, glass, R.C.C., asbestos, paints and varnishes, Fiber Reinforced Plastic (FRP)			7
Unit 2	Structural Uses of Timber Timber used as lintels, post and trusses.			5
Unit 3	Principles of Construction and Building Elements Foundations, Footings, D.P.C., flooring, sills, lintel, roofing, parapets, coping, cladding expansion joints, waterproofing of roofs, external wall sections with details, beams, columns, slabs, retaining walls, etc.			8
Unit 4	Site Development Principles and components of site-development, setting out of buildings on site			6
Unit 5	Principles on of Service Lines and Networks Layout and construction of roads, culverts, flyovers, sewer and storm water drain, water supply lines, service duct under the road.			6
Text / Reference Books:				
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	R. N. Khanna	Handbook of Civil Engineering		Engineer Publisher, New Delhi.
2.	Sushil Kumar	Building Construction		Standard Publisher Distributer, NaiSarak.
3.	W.B. McKay	Building Construction		Orient Longman Pvt. Ltd., Mumbai.
4.	G.A. Mitchell, and A.M. Mitchell	Building Construction: Structure and Fabric		The Perfect Used Book Store, London, UK
5.	M.G. Shah and	Principles of Building Drawing		MacMillan, India Ltd.

	C.M. Kale			
List of Exercises / Practicals:				
1	Visit to construction site of a large project and submit Report.			
List of Assignments/Tests:				
1	Test on Unit 1 and Unit 2.			
2	Assignment on Unit 4 or Unit 5.			
Name of the Subject: Statistical and Quantitative Methods in Planning-I				
Subject Code: 1015504				
Aim: To study Basic Statistical and Quantitative Methods and Applications in Planning.				
Objective:				
1.	To study the Data Collection Process and Methods for Data Presentation.			
2.	To study Time Series Analysis and Probability Distributions.			
Pre-Requisites: --				
Contents				Hours
Unit - 1	Data Collection Statistical data and methods; collection of data, record, file, sources of data; questionnaire design, design of sample surveys; simple random sampling, stratified sampling, systematic samples, etc.; data coding, data verification			6
Unit - 2	Basic Data Presentation Statistical tables; types of tables, comparisons, methods of presentation, graphic presentation; types of charts; plotting a curve, rules for drawing curves; bar charts, pictography, pie charts, histograms			9
Unit - 3	Statistical Methods Raw data, frequency distribution, selecting number of classes, class limits, curves, cumulative frequency distribution and gives, measures of central tendency; arithmetic mean, median, mode, geometric mean and harmonic mean; measures of absolute dispersion, range, quartile deviation, average deviation, standard deviation, skewness and kurtosis. Statistical Programme for Social Sciences (SPSS) genstat and statisticia and its application for statistical methods.			12
Unit - 4	Time Series Analysis Variation in time series, trend analysis, cyclical variation, seasonal variation, irregular variation, time series analysis forecasting; Applications in planning.			12
Unit - 5	Probability Theory and Probability Distribution			9

	Introduction, addition rule, conditional probability, multiplication rule, random variables and probability distribution, mathematical expectation; Binomial distribution, Poission distribution; and normal distribution				
Text / Reference Books:					
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher	
1.	V.K. Kapoor, S.C. Gupta	Problems and Solutions in Statistics	--	Sultan Chand	
2.	V.K. Kapoor	Applied Statistics	--	Sultan Chand	
3.	M.R. Spiesel	Theory and Problems of Statistics – Schaun Series	--	McGram Hill	
4.	S.K. Gupta	Fundamental of Statistics	--	Himalaya Publications	
5.	Levin, Rubin	Statistics for Management	--	Prentice Hall	
6.	McCuen	Statistical Methods for Engineers	--	Prentice Hall	
List of Exercises / Practicals:					
1	Visit to the National Sample Survey Office and Submit Report				
List of A ssignments/Tests :					
1	Test on Unit 1 and Unit 2				
2.	Assignment on Unit 4 or Unit 5.				

Name of the Subject: Technical Report Writing and Research Methodology				
Subject Code: 1015506				
Aim: To study methods of Technical Report Writing and to study Scientific Research Methodology.				
Objective:				
1.	To learn to prepare Coherent and Analytical Report writing with Technical Content.			
2.	To study Scientific Approach to Research.			
Pre-Requisites: --				
Contents				Hours
Unit -1	Types and Classification of Reports Types of reports, difference between technical, scientific, legal and other types of communications; specific characteristics of writing technical reports. English comprehension and oral communication.			6
Unit -2	Presentation Techniques Presentation techniques in digital and oral format for group discussion in seminars and meetings.			8
Unit -3	Format and Elements of Reports Preface, acknowledgements, contents, indexing, key word indexing, introduction, body terminal section, appendices, references; Use of Word Processing software; Literature surveys: Use of libraries, knowledge of indexing and available reference materials			10
Unit - 4	Special Type of Writing Special type of writing: articles and manuals; Planning and preparation of technical articles for publications; Popular articles; Formal letters and specifications: Business and official letters, styles and formats; Requests for specifications and other types of business enquiries; Replies to bidding for tenders and conduct of meetings; Agendas and minutes of official records and meetings			15
Unit - 5	Research Methodology Intuition and research; Scientific research, need for scientific approach to research; Research methods; Hypotheses, testing of hypotheses; Reporting of research; Research in planning.			9
Text / Reference Books:				
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Riordan, D. and Pauley, S.E.	Technical Report Writing Today	--	Jonny and Books.
2.	Allwood, J.,	Logic of Linguistics	--	Cambridge University, Press, Cambridge.

	Anderson, L.G. and Dahl, O.			
3.	C.R. Kothari	Research Methodology	2009	New Age International Publisher
4.	R. Kumar	Research Methodology	2005	Sage Publication Ltd., New Delhi
List of Exercises / Practicals:				
1	To visit Library and refer Reports, Books, etc. prepare by different Authors / Researchers / Agencies and submit a Report about their understanding.			
List of Assignments/Tests:				
1	Test on Unit 1 and Unit 2.			
2	Assignment on Unit 4 or Unit 5.			

Name of the Subject: Basic Architectural Design				
Subject Code: 1015505				
Aim: To study Spatial Aspect at Building Level.				
Objective:				
1.	To study Anthropometrics and its Relationship with Building.			
2.	To study various Space Standards, Expression of Built Mass through Plan.			
Pre-Requisites: --				
Contents				Hours
Unit -1	Anthropometrics, Layouts of Rooms and Circulations Anthropometrics, Human Activity and Space Use; Furniture Layout of a room; Building circulation/ flow diagrams;			12
Unit -2	Concepts of Space, Building Design and Space Utilization Concepts of Space, Form and Function; Factors and concepts related to building design -Climate, Site Characteristics, Land Form, Visual Elements, Behavioral Factors, Space Utilization;			20
Unit - 3	Space Standards Introduction to Space Standards, Preparation of Design Briefs; Design of simple Residential, Commercial, Institutional Buildings;			10
Unit - 4	Building Drawings Prepare Plans, Elevations, Sections; Measure Drawings of Simple Monumental / Contemporary Buildings; Appreciation of simple Buildings and Drawings;			12
Unit - 5	Rendering and Project Presentation Rendering of Drawings; Project presentation modes through physical models, oral, digital and manual sketches.			10
Text / Reference Books:				
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Joseph De Chiara	Time Save Standards for Building Types	2nd (Latest)	McGraw Hill
2	D K Ching	Architecture : Form, Space and Order	3rd	John Wiley and Sons Inc, Hoboken, New Jersey.
3	Michael Crosbie, Donald Watson	Time Saver Standards for Architectural Design	8th	Mc-Graw Hill
4	Mike W Lin	Architectural Rendering Techniques: A Colour Reference	1985	John Wiley and Sons Inc, Hoboken, New Jersey.
List of Exercises / Practicals:				

1	Visit to office of CPWD / PWD or Leading Architectural / Engineering Firm and submit Report.			
List of Assignments/ Seminar :				
1	Test on Unit 1 and Unit 2.			
2.	Assignments on Unit 3 or Unit 4 or Unit 5			
Name of the Subject: Planning and Design Lab I (Graphics and Presentation Techniques)				
Subject Code: 1015507				
Aim: To study Skills of Graphical Presentation and Drafting.				
Objective:				
1.	To study various Equipments for Graphical and Visual Presentation.			
2.	To study Scales, and various Projections such as Orthographic, Isometric, and Perspective.			
Pre-Requisites: --				
Contents				Hours
Unit -1	Drawing Equipments and Mediums Introduction to drawing equipments and mediums, Importance of graphics and visual presentations;			11
Unit -2	Shapes and Forms Use of points, lines, polygons; Horizontal, vertical, diagonal, curved lines; Line thicknesses and intensities; Texture, color and tone in materials and graphics; Shapes and forms;			33
Unit - 3	Concepts of Scales and Proportions Sketching of human figures, activities, natural and man-made elements; Concept of scales and proportions; Graphic scales; Free hand lettering; <i>Jalipatterns</i> ;			55
Unit - 4	Perspective Projections Orthographic, isometric and perspective projections of one, two and three dimensional objects;			55
Unit - 5	Appreciation and Presentation Appreciation and design of Logo and Insignia of geometric merits and format of presentation drawings			22
Text / Reference Books:				
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Alan Jeffris and David A Madsen	Architectural Drafting and Design	5th Edition	Thomson Delmar Learnig, New York
2.	Robert W. Gill	Rendering with Pen and Ink	Revised Edition	Thames and Hudson
3.	Robert W. Gill	Creative Perspective	1979	Thames and Hudson

4.	Bally Meeda, Neil Parkyn and David Stuart Walton	Graphics for Urban Design	2007	Thomas Telford Publishing London
List of Exercises / Practicals: As given in Unit 1 to Unit 5.				
List of Assignments: As given in Unit 1 to Unit 5.				