

Nirma University
Institute of Architecture and Planning
Department of Architecture

B Plan (Bachelor of Planning)

TEACHING AND EXAMINATION SCHEME

B.PLAN

SEMESTER I

Semester - I (2018-19)

Sr. No.	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			L	LPW/PW	T	C	² Duration		Component Weightage		
							SEE	LPW/PW	CE	LPW/PW	SEE
1	2PL111	Visual Communication-1	-	4.5	-	3	-	-	0.60	0.40	-
2	2PL112	Statistics-1	2		1.5	3	3.0	-	0.60	-	0.40
3	2PL113	Computer -1	1	3		3	-	-	0.60	0.40	-
4	2PL114	Introduction to Urban and Regional Planning	3	-		3	3.0	-	0.40	0.20	0.40
5	2PL115	Sociology, Culture and Cities	2	-		2	3.0	-	0.60	-	0.40
6	2PL116	Architectural/ Planning Graphic Techniques	-	4.5		3	-	-	0.60	0.40	-
7	2PL117	Urban Component Studio	-	12		8	-	-	0.60	0.40	-
Total			8	24	1.5	25					

Supplementary Courses*

1	2PLS11	Communication Skills – I	2	-	-	-	-	-	1.00	-	-
2	2PLS12	Yoga	-	1	-	-	-	-	1.00	-	-
Total			2	1							

Nrma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)

Semester - I

2PL111 VISUAL COMMUNICATION – I	L	T	P	C
	-	-	4.5	3

Learning Outcome	Students will develop basic skills of visual literacy, expression and representation
Content	<ol style="list-style-type: none"> 1. Drawing and Sketching skills 2. Basic elements and principles of visual literacy 3. Abstract composition design for basic idea and rationale development 4. Graphic techniques

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)

Semester - I

2PL112 Statistics – I	L	T	P	C
	2	1.5	-	3

Learning Outcome	Students will develop understanding of basic statistics, representation and interpretation of data
Content	<ol style="list-style-type: none"> 1. Understanding of basic statistics 2. Organization and Presentation of Data 3. Measures of Central Tendency 4. Measures of Dispersion 5. Accessing Data, Using Datasets 6. Data interpretation

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)

Semester - I

2PL113 Computer Skills – I	L	T	P	C
	1	-	3	3

Learning Outcome	Students will develop skills to use computers for written, analytical and visual/graphical applications
Content	<p>Introduction to history of computer</p> <p>Concepts of hardware and software</p> <p>Functions and applications of Word Processing Software</p> <p>Functions and applications of Spread sheets</p> <p>Functions and applications of Software for presentation</p> <p>Functions and Applications of visual/graphical representation Software</p> <p>Concepts of Internet</p>

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)

Semester - I

2PL114 INTRODUCTION TO URBAN AND REGIONAL PLANNING	L	T	P	C
	3	-	-	3

Learning Outcome	Students will develop an understanding of the evolution of spatial planning and get familiarised to the field of urban and regional planning
Content	<ol style="list-style-type: none"> 1. Early Civilizations 2. Definitions and terminologies related to planning 3. Aspects of Planning 4. Scales of spatial planning 5. Sectors of planning 6. Rural hinterland and regions 7. Types of Plans 8. Introduction to the theories of city planning

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)

Semester - I

2PL115 SOCIOLOGY, CULTURE AND SOCIETY	L	T	P	C
	2	-	-	2

Learning Outcome	To be able to develop understanding of the basic concepts of sociology and know its significance in planning.
Content	<ol style="list-style-type: none"> 1. Introduction to sociology 2. Fundamental Concepts in Sociology 3. Society, Culture and Social Change 4. Social Research Methods 5. Social Exclusion and Planning 6. Gender and Development

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)

Semester - I

2PL116 ARCHITECTURAL/PLANNING GRAPHIC TECHNIQUES	L	T	P	C
	-	-	4.5	3

Learning Outcome	Students will develop understanding & skills of technical drawing as a tool for visual communication
Content	<ul style="list-style-type: none"> • Basic and analytical geometry • Orthographic Projections, Development of surfaces, Auxiliary Projection, Sections of solid & Interpenetration of solids • Axonometric views, Isometric views and other views • Mapping as analytical tool • Mapping as reading and presentation tool

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)

Semester - I

2PL117 URBAN COMPONENT STUDIO	L	T	P	C
	-	-	9	6

Learning Outcome	Develop understanding of human involvement across space and time and develop strategies for planning catering to human need.
Content	<ul style="list-style-type: none"> • Spaces used by humans in their habitat • Socio-cultural and economic activities with respect to the urban environment where they are conducted • Scales, components and elements of an urban built environment: <ul style="list-style-type: none"> ○ neighbourhood, housing society, cluster, house ○ housing, recreational, commercial, institutional areas, road networks, open spaces, etc. ○ elements of streets • Concept of demography • Concept of socio-economic groups and the relation with different types of residential environments and human activity pattern

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)

Semester - I

SUPPLEMENTARY COURSES

2PLS11 COMMUNICATION SKILLS – I	L	T	P	C
	2	-	-	-

Learning Outcome	To be able to read, write, and articulate. To develop attitude and knowhow on how to appreciate, critically analyse and summarise texts and literature.
Content	<ul style="list-style-type: none"> • Spoken, Reading and Written Communication Skills • Engaging students in careful reading and critical analysis of imaginative literature. • Deepen understanding of the ways writers use language to provide both meaning and pleasure for their readers. • Understanding and considering elements as the use of figurative language, imagery, symbolism and tone.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - II (Revised)

L	T	P	C
-	-	6	4

Course Code	2PL211
Course Title	VISUAL COMMUNICATION USING COMPUTER APPLICATIONS

Course Learning Outcomes (CLO):

At the end of the course -

- Students will learn manual visual communication techniques
- Students will learn applications of visual literacy and design expression
- Students will learn use of Digital Visual Communications techniques including Spatial Data Visualisation.

Syllabus:

Teaching hours: 96

Unit 1: Manual Visual Communication Techniques

- Understanding of manual visual communication techniques
- Developing Visual Literacy & Analytical reasoning skills for formation of criteria to judge design

Unit 2: Computer Applications for Visual Communications

- Study and Exposure to Computer Applications for Visual communication through softwares such as AutoCAD, Sketch up.

Unit 3: Visual Communication through Design

- Developing vocabulary of visual literacy and design subject
- Developing Cognitive skill: Observation, perception, registration and design expression

Unit 4: Spatial Data Visualization

- Introduction to spatial analytical tool: GIS

Suggested Readings:

- Shah, et.al, Building Drawing with and Integrated Approach to Built Environment, McGraw Hill Education (India) Pvt. Ltd, New Delhi, 2013
- Hollis R, Thames & Hudson, Graphic Design, London 2014
- Simblet S, Sketch Book for the Artist, D. K. Publishers, New Delhi 2005
- Robertson S, & Bertling T, How to Draw, Design Studio Press, Culver City, CA 2013
- Tickoo, S, AutoCAD 2010 for Engineers and Designers, Dreamtech Press
- Olfe D.B, Computer Graphics for Design: From Algorithms to AutoCAD, Prentice-Hall, Inc

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - II (Revised)

L	T	P	C
2	-	1.5	3

Course Code	2PL212
Course Title	HISTORY OF SETTLEMENT PLANNING

Course Learning Outcomes (CLO):

At the end of the course -

- To analytically understand the processes that shape settlements.
- Focus on the determinants of urban form.
- Understand the complex processes that have historically shaped the built form and fabric of settlements.

Syllabus:

Teaching hours: 56

Unit 1 - Evolution of Settlements

- Relevance of the study of evolution of settlements, Hunter, gatherer, farmer and formation of organized society, origins and growth of cities
- Basic elements of the city Settlement size, pattern and structure as a function of socio-cultural, economic, military and religious factors.
- Planning history time lines – chronology of origin and evolution of city planning
- Overview of cities across civilizations- Egyptian, Greek, Roman, Mesopotamia and Indus Valley.
- Town Planning Thought and Principles in Ancient and Medieval India
- Town planning in medieval times and in Renaissance Europe. Origin and evolution of civic planning

Unit 2 - Planning in Pre and Post Industrial Revolution Era

- Impacts of Industrial Revolution on town and regional planning.

- Classical Concepts of City Form- Overview of Garden City (Ebenezer Howard); City Beautiful (Daniel Burnham), Contemporary City (Le Corbusier); New Social Order (Lewis Mumford's); Planning thought of Patrick Geddes, Peter Hall, Jane Jacobs, Chadwick and others
- Broadacre City, Linear city, Radial City, Grid Iron Pattern etc.
- Socio-economic impacts of growth of urban areas; Rural-urban migration. Impact of technology on urban forms. Urban structure and form- land use distribution.

Unit 3 - Settlement Systems

- Settlement system models and theories: Rank Size rule and Primate City model; Functional hierarchy and settlement system: Concepts of landmark, axis, orientation; City form as a living space; City – region relationship: the city and the region, the city region,
- City as an organism: A physical entity, social entity, economic entity and political entity.
- City as a political statement: New Delhi, Chandigarh, Washington D.C. Brasilia etc.

Unit 4 - Theories of urban structure

- Theories of urban structure including concentric zone theory, sector theory, multiple nuclei theory, isolate estate model and other latest theories,
- Theory of William Alonso on location and land-use; The Central Place theory, range of goods, area of influence; Loschian theory of location

Suggested Readings:

- AD Walk, Regional planning for urban spaces,
- Birch E, Glasson, Urban & Regional planning reader
- Healey P., Planning Theory, Pergamon Press
- Allmendinger Philip, Planning Theory, Palgrave MacMillan
- Brunn S.D.et al, Cities of the World: World Regional Urban development.
- Kostof Spiro, Thames and Hudson, City Assembled: The Elements of Urban form through History.
- Levy John M, Longman, Contemporary Urban Planning.
- Hall Peter, Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century,
- Urban and Regional Planning Since Independence : Retrospect and Prospect : Technical papers, National Town and Country Planners Congress, Mysore, Ministry of Urban Affairs and Employment
- Rao M.P., Urban Planning : Theory and Practice, CBS Publishers
- Weber Rachel et al, The Oxford Handbook of Urban Planning, Oxford University Press

- Gallion, Arthur B. and Eisner Simon, Urban Pattern: City Planning and Design, CBS Publishers

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - II (Revised)

	L	T	P	C
	2	-	-	2
Course Code	2PL213			
Course Title	PLANNING TOOLS AND TECHNIQUES			

Course Learning Outcomes (CLO):

At the end of the course -

1. Students will develop understanding about the significance of conducting surveys of different types.
2. Students will learn to calculate trend of different spatial and non-spatial indicators.
3. Student will learn to find out spatial uniformity and diversity statistically and mathematically.

Syllabus:

Teaching hours: 32

Unit 1 – Data Inventory

- Types of Data from various Sources for Planning
- Demographical Analysis & Population forecasting models

Unit 2 – Data Collection Techniques and Types of Surveys

- Data Collection Methods and Techniques: Quantitative, Qualitative & Physical, Socio-Economic Surveys
- Public Participation Techniques

Unit 3 – Analytical Techniques

- Data analysis, reasoning and relationships
- Correlation and Regression Analysis
- Statistical Inference

Unit 4 – Data Representation Techniques

- Data Presentation
- Introduction to Chi-Square Test and Analysis of Variance (ANOVA), Decision Making Models, Economic Analysis and Spatial Analysis

Suggested Readings:

- Naiman A, et.al, Understanding Statistics (Fourth Ed.), The McGraw-Hill Companies, Inc., New York, 1996
- Jaggia S., Kelly A., Business Statistics Communicating with Numbers, MsGraw Hill Education (India) Private Limited, New Delhi, 2013
- Planning Techniques for AITP, Reader on Institute of Town Planners India
- Mark R. T. Dale, Marie-Josée Fortin, Spatial Analysis, Cambridge University Press
- Richard E. Klasterman, Community Analysis and Planning Techniques, Rowman & Littlefield Publisher, 1990
- R.P. Mishra, Regional Planning: Concepts, Techniques Policies, Concept Publishing, 1992
- Field, B.G. and MacGregor, B.D. Forecasting Techniques for Urban and Regional Planning, UCL Press, London, 1992
- Bracken, I. Urban Planning Methods: Research and Policy Analysis, Methuen, London, 1999

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - II (Revised)

L	T	P	C
2	-	1.5	3

Course Code	2PL214
Course Title	RURAL DEVELOPMENT

Course Learning Outcomes (CLO):

At the end of the course -

1. Students will develop understanding about the Rural situation , social structure both in historical context as well as in post-independence era
2. Students will learn about the Economic base, political structure and issues related to rural development
3. Students will develop understanding of policies and programmes for rural development, government and non-government interventions for Rural Development

Syllabus:

Teaching hours: 56

Unit 1: Indian demography and the rural population

- Census Definition, Census figures, State wise Comparison

Unit 2: Rural economy

- Farm and non-farm sector work: agriculture, livestock, forest, artisans, cottage industries

Unit 3: Rural society

- Stratification in rural society

- Village settlement organization
- Natural resources and CPR
- Rural studies in Indian context

Unit 4: Evolution of rural development in Post-Independence India

- The Five Year Plans: Community and Rural Development (CDP, IRDP), 74th CAA and the Panchayati Raj to the present
- Agricultural development - Land reform movement, Green Revolution, Irrigation Development Programmes, Water shed development programmes
- Forest Rights and Joint Forest Management
- Rural Infrastructure and micro-planning – Housing, water, sanitation, roads
- Targeted Socio-economic Development Programmes: SC and ST sub-plans

Unit 5: The Cooperative Movement and the role of NGOs

- Operation Flood, Blue Revolution, Hariyali
- Micro-finance
- Participatory planning

Unit 6: Introduction to the concept of Participatory Rural Appraisal (PRA) in Village micro-planning

Unit 7: Introduction to the concept of Peri-urban Interface

- Relation to the city, “urbanization” and “urban growth” studied in previous semester
- Land use changes, economy, environment
- Introduction to the Rurban Mission

Suggested Readings:

- Chambers, R. (1983) “Rural development: putting the last first” Harlow: Prentice Hall
- Chandra Sekhar Prasad (2009) “Agriculture & Rural Development in India Since 1947” New Century Publications
- Gaurav Dutt and Ashwini Mahajan (2014) “Indian Economy: Datt and Sundharam” S. Chand and Company, New Delhi.
- Jodhka, Surinder (2016) “Revisiting the Rural in 21st Century India” EPW, June 25.
- Parker, Andrew (1995) “Decentralization: The Way Forward for Rural Development?” World Bank Policy Research Working Paper 1475
- Shah, Tushar (1993) “Agriculture and Rural Development in 1990s and Beyond-Redesigning Relations between State and Institutions of Development” EPW, September, 25.

- Srinivas, M N (2012) “The Remembered Village”, Oxford University Press

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - II (Revised)

L	T	P	C
2	-	1.5	3

Course Code	2PL215
Course Title	INTRODUCTION TO ENVIRONMENTAL PLANNING

Course Learning Outcomes (CLO):

At the end of the course -

1. Students will develop understanding about the multi-disciplinary nature of Environment and the significance of Environment Issues in Planning
2. Student will be able to comprehend importance of sustainability
3. Students will be introduced to Environmental Protection Strategies and Tools including Regulations

Syllabus:

Teaching hours: 56

Unit 1: Introduction to Environment

- Components of Environment
- Multidisciplinary nature of Environmental Planning

Unit 2: Ecology, Ecosystems, Biodiversity and its Conservation

- Structure, Concept and function of an ecosystem
- Energy flow, ecological succession, food chains, food webs and ecological pyramids.
- Bio-geographical classification of India
- Bio Diversity at Global, National and local levels
- Threats to Bio-diversity and its Conservation

Unit 3: Natural Resources

- Forest Resources
- Water Resources
- Mineral Resources
- Land Resources
- Food Resources
- Energy Resources
- Land Resources

Unit 4: Local and Global Environmental Issues

- Environmental Pollution
- Land, Water and Air Quality Assessment Techniques
- Linkages between Environment, Disasters and Climate Change

Unit 5: Introduction to Environmental Legislations and Strategies for Environmental Protection

- Legislation for Environmental Protection
- Sustainable Environmental Planning & Management Tools : EIA, ISO 1400

Suggested Readings:

- Dhameja S.K., Environmental Studies
- Roorda N. et.al Fundamentals of Sustainable Development, Routledge, 2012
- Shah, et.al, Building Drawing with and Intergrated Approach to Built Environment, McGraw Hill Education (India) Pvt.Ltd, New Delhi, 2013
- Wheeler A., Beatley T., Sustainable Urban Development Reader, Routledge, 2014
- Dara, S.S., A Text Book on Environmental Chemistry and Pollution Control, S.Chand & Company, New Delhi, 2007
- Malcolm D, Climate Change & Sustainable Development, Routledge, New York, 2008

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - II (Revised)

L	T	P	C
2	-	-	2

Course Code	2PL216
Course Title	ECONOMICS

Course Learning Outcomes (CLO):

At the end of the course -

1. Students will develop understanding of economics and its relevance in ‘planning’.
2. Students will learn about the core concepts in microeconomics, and its application.
3. Students will develop an ability to apply knowledge of economics in planning Cities and Regions

Syllabus:

Teaching hours: 32

Unit 1 – Introduction to Basic Concepts

- Central Concepts of Economics
- Theory of Consumer Behaviour

Unit 2 – Basic Economic Laws and Terminologies

- Market Demand, Supply, Equilibrium, Elasticity
- Theory of the Firm
- Production, Factors of Production, Functions of Production

Unit 3 – Types of Markets

- Market Structures, efficiency, Competition
- Market failure and Externalities
- Markets and Welfare
- Willingness to Pay, Willingness to Sell and Producer Surplus
- Public Private Goods

Unit 4 – Basic Macroeconomics

- Measurement of gross domestic product and national income
- Classical and modern approaches,
- Economic growth and economic development and its indicators

Unit 5 - Introduction to urban and regional economics

- Use of economic concepts in urban planning, housing, transport, taxes, land-use, location, etc.
- Use of economic concepts in regional planning, location disparities in development, input-output techniques, sectoral development, etc.

Suggested Readings:

- Samuelson P, Nordhaus W, Economics, McGraw Hill Education (India) Pvt.Ltd., New Delhi, 2010
- Samuelson P, Nordhaus, MicroEconomics, McGraw Hill Education (India) Pvt.Ltd., New Delhi, 2013
- Deodhar S, Day to Day Economics, Random House India, Gurgaon, 2012
- Economics, Paul A. Samuelson et all, Tata Mc Graw Hill Publication
- Micro Economics, Dominick Salvatore, Schaum's Outline Series, Mc Graw Hill
- N.C. Ray, Micro Economics, Macmillan
- Anindya Sen, Micro Economics, Oxford University Press
- Economics, Alec Chrystal et all, Oxford University Press
- Amos Witztum, Economics – An Analytical Introduction, Oxford University Press
- Deepashree, General Economics, Tata Mc Graw Hill Publication
- G. Omkarnath, Economics – A Primer for India, Orient Blackswan

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - II (Revised)

	L	T	P	C
	-	-	9	6
Course Code	2PL217			
Course Title	RURAL PLANNING STUDIO			

Course Learning Outcomes (CLO):

At the end of the course -

1. Students will develop understanding of **Factors governing the growth and development of rural areas**
2. Students will learn about the **factors affecting planning of a rural areas**
3. Students will be gain exposure to **rural area with reference to planning framework**

Syllabus:

Teaching hours: 144

Life and living of the rural people will be explained in terms of:

- **Factors governing the growth and development of rural areas**
- **Factors affecting planning of a rural area** in an order of their Importance and Priorities – social / political / economic /cultural /infrastructural /environmental, etc.
- **Demography** - Population, literacy, sex ratio, etc., for the year 1981, 1991, 2001, 2011
- **Employment and Asset Structure** - Nature of employment, land ownership, tenancy, Asset structure. Land Tenure and Land use
- **Agriculture and Allied Activities** - Total area, landuse, Cropping pattern, irrigation,

- finance, marketing, Agriculture labour, etc.
- **Rural Poverty and Livelihood** - Identification of poor households based on different methods, Survival mechanism and related issues
 - **Social and Cultural Issues** - Caste system, Caste stratification, Housing, Settlement pattern, Location of facilities, Variations in the house form due to social, cultural, economic or occupational variations
 - **Institutions** - Panchayat, Mahila Mandal, Credit Co-operative, Bank, Schools, Medical, Milk Cooperative, NGOs, etc.
 - **Government Programmes** - Rural Development programmes like IRDP, JRY, Rural housing schemes, rural road and drinking water related schemes. People's perception about different schemes and its impacts.
 - Village Level Amenities and Linkage - List of existing amenities, distance for non-available amenities, transportation and related issues.
 - Recent changes and development in the village and surrounding area.
 - **Entire issue of water supply, sanitation, water source development, water conservation**
 - Other Essential Components of Planning for Rural Areas

Students will undertake study of a particular village and conduct a detailed primary survey.

The primary survey is also expected to give them an exposure to research methodology, techniques of data collection, data processing and analysis.

STAGES:

- Secondary data collection
- Primary survey
- Household survey
- Collection of village Information
- Data processing and data analysis
- Inferences
- Framework of strategy for future development
- Final proposal

Suggested Readings:

- Friedman, John. Life Space & Economic Space: Essays in Third World Planning. Transaction Publishers, 1988.
- Friedman, John; Rangan HariPriya. In Defence of Livelihood: Comparative Studies on

Environmental Action, UNRISD & Kumarian Press 1993.

- Dandekar, Hemlata C. The Planners Use of Information, American Planning Association, 2003.
- Krantz, Lasse. The Sustainable Livelihood Approach to Poverty Reduction- An Introduction, Swedish International Development Cooperation Agency, 2001.
- Ellis, Frank. The Determinants of Rural Livelihood Diversification in Developing Countries, Journal of Agricultural Economics, 2000.
- Ellis, Frank and Biggs, Stephen. Evolving Themes in Rural Development 1950's – 2000s, Development Policy Review, 2001.
- Chambers, Robert. Rural Development: Putting The Last First, Chapter 1 – Rural Poverty Unperceived, Longman.
- Chambers, R. and Conway, G, Sustainable Livelihoods: A Practical Concept for the 21st Century.. IDS Discussion Paper 296, 1991.
- Hussein, Karim and Nelson, John. Sustainable Livelihoods and Livelihood Diversification, IDS Working Paper 69.
- Scoones, Ian. Sustainable Rural Livelihoods – A Framework for Analysis, IDS Working Paper 72.
- Shiva, Vandana. Economic Globalization, Ecological Feminism.

TEACHING AND EXAMINATION SCHEME

B.PLAN SEMESTER III

Sr. No.	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			L	LPW / PW	T	C	Duration		Component Weightage		
							SE E	LP W /PW	CE	LPW/P W	SE E
1	2PL311	Introduction to Landuse and Transport Planning	2	1.5	-	3	3	-	0.60	-	0.40
2	2PL312	Introduction to Housing	2	1.5	-	3	3	-	0.40	0.20	0.40
3	2PL313	Surveying and Introduction to GIS	1	3	-	3	3	-	0.40	0.20	0.40
4	2PL314	Introduction to structure & Building Materials	2	1.5	-	3	-	-	0.60	0.40	-
5	2PL315	Environmental Design	1	1.5	-	2	-	-	0.60	0.40	-
7	2PL316	Neighbourhood Planning Studio	-	12	-	8	-	-	0.60	0.40	-
	2PL317	RSP-1	-	-	-	3	-	-	-	1.00	-
			8	21	-	5					
1	2PL001	Advanced Photography	-	4.5	-	3	-	-	0.60	0.40	-
2	2PL002	Basic Design	-	4.5	-	3	-	-	0.60	0.40	-
Supplementary Courses*											
1	2PLS31	#Social Work	-	1	-	-	-	-	1.00	-	-
		Total		1							

Nirma University

Institute of Architecture and Planning Department of Architecture B Plan (Bachelor of Planning) Semester - III

L	T	P	C
2	-	1.5	3

Course Code	2PL311
Course Title	INTRODUCTION TO LANDUSE AND TRANSPORT PLANNING

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

- Understand the **concept of landuse planning.**
- Understand the **fundamentals of transportation planning.**
- Comprehend the linkages between landuse and transport.

Syllabus:

Teaching hours: 52.5

Unit 1 - Introduction to landuse planning

17.5 hours

- Basic concepts of landuse planning – purpose, need and requirement; goals, objectives and principles.
- Determinants of landuse and planning process.
- **Population studies and forecasting.**
- Different theories and debates of landuse planning – Concentric Zone Theory, Isolate Estate Model, Sector Theory, Multiple Nuclei Theory etc.;
- Landuse allocation models – William Alonso: Bid Rent Theory, Lowry Model etc.
- Debates of landuse planning: transit oriented development, land use intensity and the size of the city, sprawl and compact urban form etc.
- **Landuse planning practices – Indian and global perspective.**

Unit 2 – Landuse Planning: Legislations and Regulations

17.5 hours

- Land as a resource: Its character, potential and value; drivers of demand for land on land market
- Statues and laws governing land administration and management.
- Urban landuse classifications, spatial planning norms and standards.
- Different policies related to landuse and zoning, land suitability analysis etc.
- Spatial planning norms and standards.
- Understanding of built form in relation to FSI, building typologies, density patterns etc.

Unit 3 - Principles of Urban Transport Planning

17.5 hours

- Urban and rural road classification, cross sectional elements, street design elements, control of access;
- At-grade and grade separated intersections and rotary intersection; Junction improvement techniques;
- Street pattern and urban form; Accessibility: concept and mapping;
- Urban space for pedestrian movement
- Concept of PCU and level of service;

Essential Reading:

- Chapin, F.S.; and Kaiser, E.J., (1979), “*Urban Landuse Planning*”, University of Illinois, Urbana
- L.R. Kadiyali, (2014). “*Traffic Engineering and Transport Planning*”, Khanna Publications, New Delhi
- P R. Berke and D R Godschalk, (2006). “*Urban Landuse Planning*”, University of Illinois Press

Suggested Readings:

- B.G. Hutchinson, (2011). “*Principles of Urban Transport Systems Planning*”, McGraw Hill
- Dimitriou, T.H., (1990), (ed), “*Transportation Planning for Third World Countries*”, Routledge, London
- Faludi, A., (1973), “*Planning Theory*”, Pergamon Press, Oxford
- Faludi, A., “*Three Paradigms of Planning Theory*”, pp. 81-101, in Healay, P.;

- Jain A K, (2010). “*Urban Transport: Planning and Management*”, APH Publishing
- Kurt, Leibrant., (1970), “*Transportation and Town Planning*”
- C. S Papacostas, and P. D Prevedouros, “*Transportation Engineering and Planning*”, PHI Learning
- D. Mohan, (2013). “*Safety, Sustainability and Future Urban Transport*”, Eicher Goodearth Limited, New Delhi
- Field B.G., and MacGregor, B.D., (1987), “*Forecasting Techniques for Urban and Regional Planning*”, Hutchinson, London
- McDougall, G., and Thomas, M.J., (eds), (1982), “*Planning Theory : Prospects for the 1980's*”, Pergamon Press, London

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - III

L	T	P	C
2	-	1.5	3

Course Code	2PL312
Course Title	INTRODUCTION TO HOUSING

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

- Appreciate current issues in housing.
- Appraise and critique the salient features of housing policy and programmes.
- Examine the housing design parameters.

Syllabus:

Teaching hours: 52.5

Unit 1 - Introduction

13 hours

- Defining house, different forms and types of dwelling units and housing.
- Evolution and history of housing - settlement patterns and design components; Housing Design – various examples.
- Current issues in housing.

Unit 2 - Housing Policy Analysis

13 hours

- Significance of housing in national development.
- Understanding and evaluation of Housing Policy and Programmes in India – National and State.
- Five year plans and Central government policy.

- Policy framework for urban and rural housing;
- Housing for the low income groups. Cooperative housing, its objectives and principles.
- Management and financing of housing projects. Investment in housing in public and private sectors.

Unit 3 – Housing Need Assessment

11.5 hours

- Difference between housing need and housing demand; Understanding housing shortage.
- Housing need assessment methods: definition and limitations.
- Knowledge of data sources and their use and interpretation. Census, NSSO and other data.
- Urban and rural housing statistic; Quantitative and qualitative aspects of housing.
- Housing demand: Understanding current methods of demand assessment. Limitations of existing methods of assessments.

Unit 4 - Housing Standards and Design

15 hours

- Factors determining residential densities: location, costs and development control regulations, building bylaws.
- Housing designs parameters and their relationship to costs.
- Housing design imperatives, new technologies and techniques.
- Community based diversity in housing: Socio-economic implication of slums, clearance / improvement of slum. Sites and services schemes, squatter upgrading, incremental approach.

Essential Reading:

- Alexander, Christopher, (1977). “*Pattern language*”, Oxford Uni. Press, New York
- French Hilary, (2008). “*Key Urban Housing of the Twentieth Century: Plans, Sections and Elevations*”, W.W. Norton
- Housing Policies and Related Acts and Schemes of Government of India and State Governments
- John Turner, (1972). “*Freedom to build*”, The Macmillan Company, New York
- [Norbert Schoeneuer](#), “*6000 years of Housing*”, W. W. Norton & Company, Canada

Suggested Readings:

- Alexander, Christopher, (1963). "*Community and Privacy*", Oxford Uni. Press, New York
- Alexander, Christopher, (1975). "*Oregon experiment*" Oxford University Press, New York
- Charles Correa, (2000). "*Housing and Urbanization: Building Solutions for People and Cities*", Thames & Hudson; illustrated edition
- Habraken N J, (1972). "*Supports: An alternative to mass housing*", The Architecture press, London
- Habraken N J, (1998). "*The Structure Of The Ordinary*", The MIT press, Cambridge, Massachusetts
- Moshe Safdie, (1973). "*Beyond Habitat*", The MIT Press
- Pugh Cedric, (1990). "*Housing and Urbanisation- A study of India*", New Delhi, Sage Publications
- [Roger Sherwood](#), (1981). "*Modern housing prototypes*", Harvard University Press
- Vastu Shilpa Foundation, "Towards Humane Habitat-Code for design practices".

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - III

		L	T	P	C
		1	-	3	3
Course Code	2PL313				
Course Title	SURVEYING AND INTRODUCTION TO GIS				

Course Learning Outcomes (CLO):

At the end of the course students will be able to:

4. Develop understanding about the significance of conducting surveys.
5. Undertake topographic survey with digital and non-digital instruments and devices.
6. Know fundamentals of GIS and work with database on GIS.

Teaching hours: 60

Syllabus:

Unit 1 – Unit 1: Fundamental of Surveying

Hours: 12

- Principles of surveying
- Types of surveying
- Classification of surveys & maps
- Plan Vs Map
- Accuracy Vs Precision
- Sources and kinds of error
- Least Squares adjustments and applications.
- Key principles of Land Surveying
- Basics of Chain Surveying, Basics of Leveling.

- Modern methods and Instruments, accessories, operation, EDM without reflecting prisms
- Total Station – types, instrument description, field techniques, Traversing, motorized total stations; field procedures for total stations in topographic surveys.

Unit 2: Topographical Surveying: Concepts and Techniques Hours: 18

- Definition
- Procedure in topographic surveying
- Uses of topographical maps, Relief, methods of representing relief
- Contour and contour interval, characteristics of a contour, methods of locating contours, Interpolation of contours, Dam Surveys.
- Introduction - Maps – Types of Maps
- Fundamentals of GPS, various Satellites used by GPS, Differential GPS, Application of GPS, GPS Receivers, Hand held GPS Receiver – Function and Field procedure

Unit 3: Introduction to GIS Hours: 10

- Concept and Definition of GIS
- Components and Functions of GIS
- ArcMap, Exploring Graphical User Interface (GUI), Identifying the toolbar and its tools
- Understanding Maps, Layers & Feature Class
- Understanding Vector and Raster datasets; supported files and formats

Unit 4: Geo-referencing, Data input, map display and visualization Hours: 20

- Creating New Project
- Adding and creating shapefiles, Organizing Layers, Working with Shape files
- Digitization
- Importing Data Importance of adding Spatial Information to Scanned Map/Satellite Image
- Geo-referencing: Geo-referencing of Scanned Paper Map, Adding Control Points; Auto-adjust; Update Geo-referencing; Checking the Geo-referencing Errors; Saving the Geo-reference image file
- Adding database in attribute table and basic analysis
- Map display and visualization
- Printing a map from layout and Exporting map as image

Essential Reading:

- Rangwala S.C. (2011), Surveying and Leveling, Charotar Publishing House Pvt.Ltd.

- Chandra A M (2006), Plane Surveying, New Age International (P) Ltd. Publishers
- Khasiya R.B. & Motwani A.T. (2015), Advanced Surveying, Mahajan Publishing Houe
- “National Atlas and Thematic Mapping Organisation” (NATMO) Publications
- Andrew Skidmore et al, “*Environmental Modelling with GIS and Remote Sensing*”, CRC Press

Suggested Readings:

- Basdudeb Bhatta, “*Remote Sensing and GIS*”, Oxford University Press
- David J Maguire et al, “*GIS, Spatial Analysis, and Modelling*”, ESRI Press
- Mesfin T Bekalo et al, “*Landuse Change Detection using GIS, Remote Sensing and Spatial Matrices*”, Lap Lambert Academic Publications

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - III

L	T	P	C
2	-	1.5	3

Course Code	2PL314
Course Title	INTRODUCTION TO STRUCTURES AND BUILDING MATERIALS

Course Learning Outcomes (CLO):

At the end of the course the student would be able to –

1. Classify building materials, understand their properties and basic principles of construction
2. Get conceptual understanding of building systems, structural behavior of materials and construction systems
3. Represent basic building elements, construction systems and materials used through drawings and models.

Syllabus:

Teaching hours: 52.5

Unit 1	Basic materials of construction: natural and manmade	10.5 hours
	<ul style="list-style-type: none"> • Natural Building Materials : Types, Genesis, Properties and Systems • Manmade Building Materials : Types, Genesis, Properties and Systems <ul style="list-style-type: none"> ○ Conventional ○ Non-conventional 	
Unit 2	Elements of construction systems in relation to properties of materials	10.5 hours

	<ul style="list-style-type: none"> • Elements of a Construction System: walls, foundations, roof/terrace, parapets, toilets, openings – doors, windows • Materials in Building Elements 	
Unit 3	Structural Systems	7 hours
	<ul style="list-style-type: none"> • Broad categorization of structural system • States of stresses • Basic requirements of structure • Different methods of categorization of structural system • Structural systems based on mechanism of transfer of load 	
Unit 4	Basics of Structural Dynamics	7 hours
	<ul style="list-style-type: none"> • Assumption in strength of materials, basic terminology, brief history of strength of materials. • Concept & importance of the shear force, bending moment, deflection and its importance • Stability, buckling of columns, short and long columns. • Sections made up of more than one material (composite sections) 	
Unit 5	Study and Representation of Building Materials and Systems	17.5 hours
	<ul style="list-style-type: none"> • Plans, sections and details – wooden joinery, masonry construction, RCC construction, steel systems 	

Essential Readings:

Agrawal, B. K. (2013) “*Introduction to Engineering Materials*” New Delhi: Tata McGraw Hill Education Ltd.

Chudley, R. (2010) “*Building Construction Handbook*” Oxford: Butterworth-Heinemann Ltd.

Khurmi, R. S. (2013) “*Strength of Materials: Mechanics of Solids*” New Delhi: S. Chand & Company Ltd.

Kumar, Sushil (2012) “*Building Construction*” New Delhi: Standard Publishers Distributors

Levy, Matthys. (2002) “*Why Buildings Fall Down: How Structures Fail*” New York: W. W. Norton and Co.

McKay, J. K. (2013) “*Building Construction Vol – 1: Metric*” Delhi: Pearson Education Asia Pte. Ltd.

McKay, J. K. (2014) “*Building Construction Vol – 2: Metric*” Delhi: Pearson Education Asia Pte. Ltd.

McKay, J. K. (2013) “*Building Construction Vol – 3: Metric*” Delhi: Pearson Education Asia Pte. Ltd.

McKay, J. K. (2014) “*Building Construction Vol – 4: Metric*” Delhi: Pearson Education Asia Pte. Ltd.

Millais, Malcolm (2005) “*Building structures from concept to design*” London: Spon Press

Suggested Readings:

Cowan, Henry J. (1976) “*Architectural Structures: An Introduction to Structural Mechanics*” New York: Elsevier.

Duggal, S. K. (2012) “*Building Materials*” New Delhi: New Age International (P) Limited

Parikh, Janak (2000) “*Understanding Concept of Structural Analysis and Design*” Anand: Charotar Publishing House

Punmia, B. C. (2008) “*Building Construction*” New Delhi: Laxmi Publications Pvt. Ltd.

Rangwala, S. C. (2014) “*Building Construction*” Anand: Charotar Publishing House

Rangwala, S. C. (2014) “*Engineering Materials: Material Science*” Anand: Charotar Publishing House

Salvadori, Mario (1963) “*Structure in Architecture*” Englewood Cliffs, NJ: Prentice-Hall

Salvadori, Mario (1980) “*Why Buildings Stand Up: The Strength of Architecture*” New York: W. W. Norton and Co.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - III

L	T	P	C
1	-	1.5	2

Course Code	2PL315
Course Title	ENVIRONMENTAL DESIGN

Course Learning Outcomes (CLO):

At the end of the course student would be able to:

4. Identify the role and importance of climate and culture in built environment.
5. Relate various climatic control techniques and technologies with aspects of energy efficiency mechanism used in the built environment
6. Apply the climatic, cultural context and sustainability principles in the field of design

Syllabus:

Teaching hours: 37.5

Unit 1	Introduction to climate, culture and built environment	5 hours
	<ul style="list-style-type: none"> • Elements of climate • Importance of Earth's orbit, and Sun path in determining the climatic and weather conditions • Tropics and its Climatic zones • Different climatic zones in India 	
Unit 2	Climatic comfort and control	7.5 hours
	<ul style="list-style-type: none"> • Concept of thermal comfort • Defining comfort, comfort zone & scale, thermal comfort indices • Daylight and natural ventilation • Climatic response in vernacular built environment • Macro and micro building typology in various climatic zones 	

	<ul style="list-style-type: none"> • (Implications of climatic forces in nature of spaces and forms, patterns of organization & elements of built form at individual building & collective form) 	
Unit 3	Contemporary built environment	7.5 hours
	<ul style="list-style-type: none"> • Heat gain in the buildings – form, organization and elements • Behavior & properties of material/s • Climatic control techniques and technologies • Study of passive environmental control mechanisms 	
Unit 4	Energy Efficiency in Built Environment	5 hours
	<ul style="list-style-type: none"> • Introduction to various rating system for energy efficiency • Introduction to ECBC • Introduction to energy simulation software and programs • Site, neighborhood and city planning aspects • Application of building materials for energy efficiency 	
Unit 5	Design of Public Space	5 hours
	<ul style="list-style-type: none"> • Relationship between built and un-built elements to create better living environment • Introduction to Landscape Design • Issues of sustainability at various scales of planning and design • Pattern language at various scales of built environment 	
Unit 6	Case studies on Environment Design	7.5 hours
	<ul style="list-style-type: none"> • Lake/River Front Development • Urban Regeneration • Area Planning 	

Essential Readings:

Bureau of Energy Efficiency (2007) “*Energy Conservation in Building Code*” Ministry of Non-renewable Energy, Government of India

Dekay, Mark (2014) “*Sun, Wind and Light: Architectural Design Strategies*” USA: John and Wiley Sons Inc.

Koenigsberger, Otto, Ingersoll, T. G., Mayhew, Alan & Szokolay, S. V. (2013) “*Manual of Tropical Housing & Building*” Hyderabad: Universities Press Private Limited

Krishan, Arvind, Baker, Nick, Yannas, Simos & Szokolay, S.V. (2012) “*Climate Responsive Architecture: A Design Handbook for Energy Efficient Buildings*” Tata McGraw-Hill Education (Asia) Co

Majumdar, Mili (2001) *“Energy Efficient Building in India”* New Delhi: The Energy and Resources Institute.

Nayak, J K, Hazra, R, Prajapati, J. (1999) *“Manual On Solar Passive Architecture”* New Delhi: Solar Energy Centre, MNES, Gov. Of India

Olgay, Victor (1963) *“Design With Climate – Bio-Climatic Approach to Architectural Regionalism”* New Jersey: Princeton University Press

Tipnis, Aishwarya (2012) *“Vernacular Traditions- Contemporary Architecture”* New Delhi: The Energy and Resources Institute.

Suggested Readings:

Ahluwalia, V K (2015) *“Environmental Science”* New Delhi: The Energy and Resources Institute.

Bansal, N. K & Mathur, Jyotirmay *“Energy Efficient Windows”* Anamaya Publishers

Chawla, Shashi (2013) *“Textbook of Environmental Studies”* New Delhi: Tata McGraw Hill Education Private Limited

Evans, Martin (1980) *“Housing Climate and Comfort”* London: Architectural Press

Galloe, Salam and Sayigh A.M.M. (1998) *“Architecture, Comfort and Energy”* Oxford, U.K: Elsevier Science Ltd.

Givoni, B (1994) *“Passive and Low Energy Cooling of Building”* New York: Van Nostrand Reinhold

Givoni, B (1981) *“Man, Climate and Architecture: Architectural Sciences Series –Applied”* London: Science Publishers Ltd.

Hopfe, Christina J & McLeod (2015) Robert S. *“Passivhaus Designer's Manual: A Technical Guide to Low and Zero Energy Buildings”* Routledge Taylor & Francis Ltd.

Kukreja, C P (1978) *“Tropical Architecture”* Tata McGraw-Hill Publishing Company

Laureano, Pietro (2013) *“Water conservation techniques in traditional human settlements”* Ghaziabad: Copal

McMullan, Randall (2012) *“Environmental Science in Building”* Palgrave.

Oliver, Paul (2006) *“Built to meet needs: cultural issues in vernacular architecture”* Burlington, Elsevier

Shah, M G, Padki, S Y & Kale, C M (2002) *“Building Drawing: with an Integrated Approach to Built Environment”* New Delhi: Tata McGraw-Hill Education

Rajagopalan, R. (2011) *“Environmental Studies: From Crisis to Cure”* New Delhi: Oxford University Press

Nirma University

Institute of Architecture and Planning

Department of Architecture

B Plan (Bachelor of Planning)

Semester - III

		L	T	P	C
		-	-	12	8
Course Code	2PL316				
Course Title	NEIGHBOURHOOD PLANNING STUDIO				

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

4. Understand the physical and social issues related to planning and design of neighborhoods within a city.
5. Identify major socio – economic, physical, environmental and regulatory issues pertinent to planning of neighborhoods.
6. Prepare affordable and environmentally sustainable designs and neighborhood plans.

Syllabus:

Teaching hours: 180

Unit 1: Spatial and Socio - economic Appreciation of the Neighborhood

48 Hours

- Neighborhoods: definition and delineation of neighborhoods (preparation of base map);
- Socio-economic and cultural mapping of the neighborhood to ascertain community needs, capabilities and behavioral pattern;
- Appreciation of various neighborhood elements – existing and alternative built form, road network, connectivity to surrounding land, FAR, densities, building heights, open spaces, vacant land parcel, surrounding urbans cape and skyline;
- Documentation of neighborhood typologies and respective characteristics

Unit 2: Site Analysis

42 hours

- Slope analysis, vegetation cover, drainage pattern, flora and fauna, air movement, sun path, study of neighboring built forms with respect to site.
- Study of development alternatives following DCRs compatible for the site;
- Development and design standards based on case study findings and preparation of the design brief;
- Matching site potential with design brief

Unit 3: Preparation of Layout Plans 48 hours

- Preparation of layout plan showing plan, sections and elevation of housing typologies, circulation pattern and basic infrastructures following existing statutes;
- Preparation of presentation drawings; Preparation of model at an appropriate scale

Unit 4: Preparation of Unit Design and Cluster Plan 42 hours

- Preparation of plans, sections, elevations and important details of different housing typologies with adequate details incorporating building byelaws and relevant regulations.
- Preparation of final cluster plan.

Suggested Readings:

- Alexander, C, (1963). *“Community and Privacy”*, Oxford Uni. Press, New York
- Alexander, C, (1975). *“Oregon experiment”* Oxford University Press, New York
- Alexander, C, (1977). *“Pattern language”*, Oxford Uni. Press, New York
- Ashish M K, (1991). *“Housing for the low Income : studies in innovative neighbourhood planning”*, New Delhi, HUDCO.
- Berk, M.G. (2005). *“The Concept of Neighborhood in Contemporary Residential Environments: An Investigation of Occupants’ Perception”*, Online at <http://mpr.ub.uni-muenchen.de/22481/>
- BMTPC, (2009). *“Directory of Indian building materials & products”*, New Delhi
- BMTPC, *“Building Materials In India: 50 Years”*, New Delhi.
- Charles Correa, (2000). *“Housing and Urbanization: Building Solutions for People and Cities”*, Thames & Hudson; illustrated edition
- Chiara, J.D. (1982). *“Urban Planning and Design Criteria”*, VNR Company, New York. pp. 558-561.
- Christopher A, Howard D, Julio M, Donald C, (1985). *“The production of Houses”*, New York: Oxford University Press.
- Desai. M, (2007). *“Traditional Architecture: House From of the Islamic Community of Bohras in Gujarat and Maharashtra”*, National Institute of Advanced Studies in

Architecture (NIASA), COA

- Eric F, Caroline S, (2009). “*Urban housing handbook*”, England, John Wiley & Son Ltd.
- French Hilary, (2008). “*Key Urban Housing of the Twentieth Century: Plans, Sections and Elevations*”, W.W. Norton
- Gallion, A.B. and Eisner, S. (Eds.) (1984). “*The Urban Pattern: City Planning and Design*”, CBS Publishers, Delhi. pp. 223-226.
- Horn, A. (2004). “*Reflections on the concept and conceptualization of the urban neighborhood in societies in transition: The case of Pretoria (South Africa)*”, Dela, Vol.21, pp. 329-340.
- Joglekar M N, (1992). “Low rise high density planning and sustainable development”, Kuala Lumpur, Eastern Regional Organisation for Planning and Housing (EAROPH).
- Joglekar M N, Das S K, (1995). “*Contemporary Indian architecture: housing and urban development*”, New Delhi, Galgotia Pub. Co.
- Kevin L, (1981). “*Good City Form*”, Cambridge, MIT Press
- Kevin L, Gary H (1984). “*Site Planning*”. Cambridge, MIT Press
- Kevin L. (1960). “*The Image of the City*”. Cambridge, The technology press & Harvard University press.
- [Norbert Schoeneuer](#), “6000 years of Housing”, W. W. Norton & Company, Canada
- Rajagopalan, R, (2011). “*Environmental Studies: From Crisis to Cure*” .New Delhi, Oxford University Press
- Shambharkar, R.M. (2008). “*The Neighborhood Unit: Concept as an Urban Space, Architecture Time, Space and People*”, October. pp. 30-34.
- Vastu Shilpa Foundation, “*Living Environment - Jethabhai ni pol*”
- Vastu Shilpa Foundation, “*Living Environments by Balkrishna Doshi*”
- Vastu Shilpa Foundation, “*Residential Open Spaces-A behavioural analysis*”,
- Vastu Shilpa Foundation, “*Towards Humane Habitat-Code for design practices*”
- Vastu Shilpa Foundation, “*Urban open Spaces as Civic nodes- Case Ahmedabad*”
- Vastu Shilpa Foundation, “*How the other half builds- Volume 1:Self Selection Process*”
- Vastu Shilpa Foundation, “*How the other half builds- Volume 1:Spaces*”
- Vastu Shilpa Foundation, “*How the other half builds- Volume 2: Plots*”
- Watson, D. (2009). “*Time saver Standards for Building Materials and Systems: Design Criteria and Selection Data*”. New Delhi: Tata McGraw Hill Education Private Limited.
- Watts, A, (2013). “*Modern construction handbook*”. New York: Springer, 2013
- Whittick, A. (Ed.) (1974). “*Encyclopedia of Urban Planning*”, McGraw-Hill Book Company, USA. pp. 714-715.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - III
Electives Semester III

	L	T	P	C
	-	-	3	2
Course Code	2PL001			
Course Title	ADVANCED PHOTOGRAPHY			

Course Learning Outcomes (CLO):

At the end of the course students will be able to -

4. Know about other equipment (Filters, Exposer Meter) apart from Camera used in Photography.
5. Learn about photographic processes to be followed within various contexts.
6. **Selecting and Editing of Photos for various subjects.**

Syllabus:

Teaching hours: 45

Unit 1 – Understanding of Photography Equipment (Electronic Light & Light Meter). Hours: 10

- Studio Lights for Various Photo shoot
- Camera : Types, Technical specifications
- **Utility of Different Lenses. (Perspective Correction Lens, Tele Lenses etc.)**

Unit 2 – **Photographic processes**

Hours: 15

- Understanding subject requirements to be captured through photography medium.
- Steps to be followed for photographic processes within context of various themes such as art, urban settings, heritage conservation, low light conditions, etc.
- Understanding Artificial & Natural Light. (White Balance)

Unit 3 – Portfolio preparation

Hours : 20

- Establishing coherence in body of work based on specific theme, concept and subject matter and composition.
- Assembling and Compilation of body work into portfolio and methods of presentation/distribution. (Photo Editing & Basics of Photoshop & Illustrator)
- Development of written and verbal critique of works of peers and portfolios.
- Understanding of Famous Photographers and their works depiction.

Suggested Readings & Viewing:

- Videos of many prominent photographers work and their understanding their famous photos and talks by them.
- Photography Documentaries.
- Photography Movies. (Baraka, Samsara and Visual Aquatics etc)
- Photography Books (Kodak Digital Photo Book, Decisive Moment HCB.
- Alaha Of the World (DDD)
- Oriental Moon
- Internal America
- India By Raghuver Singh
- Taj Mahal By Raghu Rai
- Calcutta By Satyajee Ray
- Independent India By Government Of India.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - III
Electives Semester III

		L	T	P	C
		-	-	4.5	3
Course Code	2PL002				
Course Title	BASIC DESIGN				

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

- Learn the elements and principles of design
- Analyze various cultural expressions in design
- Acquire skill to work with various materials

Syllabus:

Teaching hours: 67.5

Unit 1	Basic elements and principles of Design	18 hours
	<ul style="list-style-type: none"> • Basic elements of design – Point, line, shape and solid • Creating a module with basic elements • Case study of natural forms / understanding basic organisation as well as design principles present in chosen natural form / object • Abstraction of idea in a model – representing the module with colour and material exploration 	
Unit 2	Simplifying the complex objects - abstraction of simplified objects	18 hours
	<ul style="list-style-type: none"> • Simplifying the Objects / buildings into basic geometrical forms and assembly • Abstraction of Simplified objects / geometrical forms 	

	<ul style="list-style-type: none"> • Ideas to develop the abstraction 	
Unit 3	Complex observations, design and expressional skill	13.5 hours
	<ul style="list-style-type: none"> • Complex Objects • Form and Design Principles • Expression 	
Unit 4	Skills for working with Materials	18 hours
	<ul style="list-style-type: none"> • Experimenting with materials and forms that define the abstraction, composition used as basis for development of idea • Materials depicting urban form 	

Essential Readings:

- Arnheim, R. (1969) *“Visual thinking.”* Berkeley: University of California Press.
- Atkin, W. W. (1976) *“Architectural presentation techniques.”* New York: Van Nostrand Reinhold Co.
- Ching, Francis D. K., and Steven P. Juroszek (1998) *“Design Drawing.”* New York: Van Nostrand Reinhold.
- Ching, Francis D. K. (1975) *“Architectural Graphic”* New York: Van Nostrand Reinhold
- George A Covington & Bruce Hannah, (1996) *“Access by Design”* Van Nostrand Reinhold.
- Gill Robert, W. (1984) *“Rendering with Pen and Ink: with 192 illustrations”* London: Thames & Hudson.
- Marjore, Elliott Bevin (1977) *“Design through Discovery”* Holt Rinehart and Winton.
- Pearce, P. (1978) *“Structure in nature is a strategy for design”* Cambridge: MIT Press.
- Stevens, P. S. (1974) *“Patterns in nature”* Boston: Little, Brown.

Suggested Readings:

- Ching, Francis D. K. (2007) *“Architecture: Form, Space, and Order”*. Hoboken, N.J: John Wiley & Sons
- Meiss, P. V. (1990). *“Elements of architecture: from form to place”*. London: Spon.

TEACHING AND EXAMINATION SCHEME
B.ARCH.
SEMESTER IV

Sr. No.	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			L	LP W/ P W	T	C	Duration		Component Weightage		
							SEE	LPW/ PW	CE	LPW /PW	SEE
1	2PL411	Planning Theory	2	2	-	3	3	-	0.40	0.20	0.40
2	2PL412	Infrastructure Planning - I	2	2	-	3	3	-	0.40	0.20	0.40
3	2PL423	GIS and Remote Sensing	1	3	-	3	-	-	0.40	0.20	0.40
4	2PL414	Land Economics	2		2	3	3	-	0.60	-	0.40
5	2PL415	Transportation Planning	2		2	3	3	-	0.60	-	0.40
6	2PL426	Infrastructure Planning Studio	-	12	-	8	-	-	0.60	0.40	-
8	2PL417	Related Study Programme (RSP-1) #	Minimum 14 days x 8 hrs/day = 112 hrs.			3					
Total			9	18	3	6					

Elective Courses³

(Students have to register and clear in any one course)											
1	2PL003	Research Methodology	1	3	-	3	-	-	0.60	0.40	-
2	2PL004	Demography and Urbanization	2	2	-	3	3	-	0.40	0.20	0.40
Total											

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - IV

L	T	P	C
2	-	1.5	3

Course Code	2PL411
Course Title	PLANNING THEORY

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

- Understand the meaning of ‘urban’, and the process of urbanization in reference to developing countries
- Learn theories of urban and regional planning
- Relate planning activities to theoretical background

Syllabus:
hours: 52.5

Teaching

Unit 1 Introduction

**17.5
hours**

- Theoretical aspects of city planning, interrelationships amongst physical planning, environment, economy and society
- Planning Theory: shift from the rural to the urban; the meaning and function of cities; the separation of space and community; economic advantage of cities

51

- The Post-industrial City - Changes in society and settlements following industrial revolution. Political and ideological basis of planning in different contexts.
- Pre-colonial Town and Cities in India - Pre-colonial Planning

Unit 2 Cities in History 17.5 hours

- The Colonial City - Effects of colonization on the third-world urban pattern and city structure - Planning under the colonial rule
- Garden City and Regional Perspective - Garden City idea and new towns, Regional Planning – ideas and practices - Anarchist tradition
- Garden – Regional City in India, New Towns and IDSMT, Regional contexts of metropolitan plans,
- The City of Neighbourhoods and Communities - Neighbourhoods in planning, Birth and development of the neighbourhood idea
- The Indian neighbourhood - Urban renewal and its aftermath

Unit 3 Contemporary Theories of Planning 10.5 hours

- Theories of sustainable City Planning with reference to the developing world cities:
- Metropolitan Planning: Sub-urbanization and Regionalism
- Changing Cityscape and Future Challenges of Urban Planning: Public Space, Beyond Modernism, Restructuring and Globalization
- Theories of Globalization, Global City, Megacities

Unit 4 Advocacy and Participatory Planning 7 hours

- NGOs in Planning: rise of advocacy planning
- Changing role of NGOs in India, Urban social

- movement - India
- Sectoral Urban Planning process, District Planning Committee- Role and Functions; Planning process through State Planning and Commission; Planning Commission and other bodies: Roles, functions and process
 - Participatory planning

Essential Readings:

Books:

Davidoff, Paul (1973), “*Advocacy Planning and Pluralism in Planning*”, in Faludi, A., (ed.), *A Reader in Planning Theory*, Pergamon Press, Oxford

Hall, Peter (2014) “*Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*”, Oxford Malden, Wiley Blackwell

Jacobs, Jane (1961) “*The Death and Life of Great American Cities*” Vintage Books

Kostof, Spiro (1999) “*City Assembled: The Elements of Urban form through History*”. New York: Thames and Hudson.

Levy, John (2016) “*Contemporary Urban Planning*” London: Routledge

Sivaramakrishnan, K C, Kundu, Amitabh & Singh, B N (2015) “*Handbook of Urbanization in India*” Oxford University Press

Spodek, Howard (2013) “*City Planning in India under British Rule*” EPW, Jan, 26

Papers and Articles:

Lane, Marcus (2005) “*Public Participation in Planning: an intellectual history*” *Australian Geographer*, Vol. 36, No. 3, November, 283-299

Harris, Nigel (2015) “*From Master Plans to City Development Strategies*” EPW, June, 6

Suggested Readings:

Books:

Allen, J., Massey, D. & Pyke, M. (eds.) (1999), "*Unsettling Cities: Movement/ Settlement*" London: Routledge

Angotti, Thomas (1993), "*Metropolis 2000 – Planning Poverty and Politics*" London: Routledge

Bridge, Gary & Watson, Sophie (2000) "*A Comparison to the City*" Blackwell Pub., Oxford

Brunn, S.D., Hays-Mitchell, Maureen & Zeigler, Donald J. (2012) "*Cities of the World: World Regional Urban development*" Washington DC: Rowman & Littlefield Publishers

Healey, P. (1997) "*Planning Theory*" Pergamon Press

Rao, M.P. (2015) "*Urban Planning: Theory and Practice*", CBS Publishers

Papers and Articles:

Albers, G. & Papageorgiou, V. (1985) "*Town Planning 1945-1985: An Attempt towards a Synoptic View*" in *Ekistics*, March/April

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - IV

L	T	P	C
2	-	1.5	3

Course Code	2PL412
Course Title	INFRASTRUCTURE PLANNING - I

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

1. Understand the basic concepts related to lifeline infrastructure and their significance to human settlements, environment, public health and hygiene
2. Inculcate knowledge about storm water drainage system, water supply system, waste water drainage system, solid waste management and other services
3. Apply the standards and relate to the concept of demand, supply, pricing, delivery and management

Syllabus:

**Teaching
hours: 52.5**

Unit 1

Introduction to Basic Concepts

7 hours

- Role of the planner in planning of utilities and services

55

- Implications of utilities and services planning on public health and environmental protection
- Familiarizing with different manuals, codes and standards

Unit 2 Water Supply Systems 7 hours

- Water and health
- Surface and ground water sources, quality and quantity, location of sources and water intakes, area requirements of the components of water intakes
- Water requirement for different land uses, factors affecting water demand, per capita requirement and variations
- Water treatment system, location and space requirements
- Components of water distribution systems, Planning for Various uses, Storage and supply network
- Policy for urban and rural water supply

Unit 3 Storm Water Drainage System 7 hours

- Definition of Hydrology
- Classification, hydrological cycle, urban water cycle
- Types precipitation and measurement, rain fall analysis, surface water runoff, measurements of runoff, watershed
- Flood frequencies, and flood protection measures in urban areas, layout and design of storm water system, rain water harvesting systems

Unit 4 Sanitation and Sewerage Systems 7 hours

- Sanitation and public health
- Off-site and on-site sanitation and technology
- Low cost appropriate technologies for sanitation
- Disposal systems: Conventional and Alternate
- Standards for Indian cities: Sanitary sewer system network and layout planning, Sewage disposal methods, location criteria and capacity
- Financing and cost recovery for sewer system
- Social stigma associated with sanitation: use and

	disposal	
	<ul style="list-style-type: none"> • Public toilets • National urban Sanitation Policy (City Sanitation Plans) 	
Unit 5	Solid Waste Management	7 hours
	<ul style="list-style-type: none"> • Solid waste management for Indian cities, quantity of solid waste and its character • Methods of solid waste management, collection, transportation and disposal • Land filling and composting, and other methods of pre and post treatment, location and cost aspects of different methods of solid waste disposal systems • Community participation and involvement of NGOs in efficient solid waste management 	
Unit 6	Other Services	3.5 hours
	<ul style="list-style-type: none"> • Telecommunication Services- Locational criteria for mobile phone towers • Gas and oil pipelines • Electric substations requirements, capacity, location and space requirement 	
Unit 7	Service Delivery and Management	14 hours
	<ul style="list-style-type: none"> • Organizations- jurisdictions and financing • PPP arrangements and government's role • Distribution, companies and regulatory processes • Case study on good practice, innovative methods for technology, service delivery, financing and regulation in all the above cases 	

Essential Readings:

Books and Reports

CPHEEO (2013) “*Manual on Sewerage and Sewage Treatment*” to be retrieved from <http://cpheeo.nic.in/Sewerage.aspx>

Garg, S K (2010) “*Water Supply Engineering*” Khanna Publishers

IDFC-Government of India (2011) “*India Infrastructure Report: Water: Policy and Performance for Sustainable Development*” to be retrieved from <https://www.idfc.com/pdf/report/IIR-2011.pdf>

IDFC-Government of India (2007) “*India Infrastructure Report: Rural Infrastructure*” to be retrieved from <https://www.idfc.com/pdf/report/IIR-2007.pdf>

IDFC-Government of India (2006) “*India Infrastructure Report: Urban Infrastructure*” to be retrieved from <https://www.idfc.com/pdf/report/IIR-2006.pdf>

Morgan, Charles S (2010) “*Regulation and the Management of Public Utilities*” UK: Gale

Peavy, Howard S., Rowe, Donald R. & Tchobanoglous, George (2013) “*Environmental Engineering*” Tata McGraw Hill

Town and Country Planning Organisation (2015) “*Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*” Ministry of Urban Development, Government of India; to be retrieved from <http://moud.gov.in/upload/uploadfiles/files/URDPFI%20Guidelines%20Vol%20I.pdf>

Papers and Articles:

Kundu, Amitabh (1991) “*Micro Environment in Urban Planning-Access of Poor to Water Supply and Sanitation*” EPW, September, 14

Mohan, Rakesh (2003) “*Infrastructure Development in India: Emerging Challenges*” Paper presented at Annual Bank Conference on Development Economics, Bangalore

Shreyaskar, Pankaj K P (2016) “*Drawing on the Right to Live with Human Dignity: Contours of Access to Water and Sanitation in India*” EPW, December, 3

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - IV

L	T	P	C
1	-	3	3

Course Code	2PL413
Course Title	GIS AND REMOTE SENSING

Course Learning Outcomes (CLO):

At the end of the course Students will be able to -

- Develop understanding about database management.
- Display data in maps.
- Acquire fundamental knowledge of Remote Sensing through Satellite imageries.
- Gain insights on application of GIS and Remote Sensing in Planning.

Teaching hours: 60

Syllabus:

Unit 1: Database Management and Data Analysis

Hours: 12

- Fundamental concepts of Database Management System
- Query Building
- Understanding the usage of ArcTool Box

59

- Creating Charts and graphs
- Statistics Summary
- Using Field Calculator
- Calculate Geometry
- Buffering or Proximity Analysis
- Overlay Analysis
- 3D, spatial and statistical analysis
- Land Matrix
- Land Utilization
- Cloud Computing
- Crowd Sourcing

Unit 2: Displaying Data in Maps and Map Elements

Hours: 16

- Symbology
- Labeling and Annotation
- Creating Map Layout
- Inserting Map Scale; Legend Map; Title; North Symbol; Creating Grids; Other map Elements and Saving a Layout.
- Conducting a Land Suitability Analysis using GIS, Introduction to new concepts like cloud computing, crowdsourcing etc.

Unit 3: Remote Sensing and Photo Interpretation

Hours: 16

- Remote Sensing -Definition, Aerial and Satellite Remote Sensing; Aerial Photo-Interpretation, Qualitative and Quantitative Elements of Photo-Interpretation
- Satellite Remote sensing, Geo-Stationary and Sun-Synchronous Satellites, Principles of Electro-Magnetic Radiations, Resolutions
- Introduction to Digital Image Processing
- Salient Features of Popular Remote Sensing Satellites; Applications in Planning
- Laboratory Exercises

Unit 4: Photogrammetry

Hours: 08

- Limitations of Traditional Surveys for Planning
- Photogrammetry as an Alternative Tool for Surveying
- Aerial Photographs, Classification
- Principles of Stereoscopic Vision
- Basic instruments -Stereopair, Pocket and Mirror Stereoscopes, Parallax Bars
- Principles of Photogrammetry, Measurement of Heights and Depths
- Introduction to Digital Photogrammetry

Unit 5: Planning Information Systems in India

Hours: 08

- Introduction to Spatial Data Infrastructure, NNRMS, NUIS, National Urban Observatory, Municipal Information Systems, Land Information Systems, Cadastre Systems
- Applications and Limitations
- Tools for Spatial Data Handling,
- BHUVAN
- Agencies responsible for generating spatial data.

Suggested Readings:

- “National Atlas and Thematic Mapping Organisation” (NATMO) Publications
- Andrew Skidmore et al, “*Environmental Modelling with GIS and Remote Sensing*”, CRC Press
- Basudeb Bhatta, “*Remote Sensing and GIS*”, Oxford University Press
- David J Maguire et al, “*GIS, Spatial Analysis, and Modelling*”, ESRI Press
- Mesfin T Bekalo et al, “*Landuse Change Detection using GIS, Remote Sensing and Spatial Matrices*”, Lap Lambert Academic Publications
- Mezenzia Mengist, Vdm Verlag, “*Lans Sustainability Evaluation using GIS and Remote Sensing Technology*”,
- Netzband, “*Applied Remote Sensing in Urban Planning, Governance and Sustainability*”, Springer, India
- PA Longley et al, “*Geographic Information Systems and Science*”, John Wiley and Sons Ltd.

- Qihao Weng, “*Remote Sensing and GIS Integration: Theories, Methods and Applications*”, McGraw Hill Professional
- Satheesh Gopi, “*Advanced Surveying: Total Station, GIS and Remote Sensing*”, Pearson
- Thomas M Lillesand et al, “*Remote Sensing and Image Interpretation*”, John Wiley and Sons Ltd.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - IV

L	T	P	C
2	1.5	-	3

Course Code	2PL414
Course Title	LAND ECONOMICS

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

1. Learn basic economic concepts related to land.
2. Apprehend the land development process and undertake economic analysis of urban development programme.
3. **Develop insights on the process of land management.**

Teaching hours: 52.5

Syllabus:

Unit 1: Introduction to Land Economics 14
hours

- Economics concepts of land
- Objectives and scope of land economics

63

- Relevance of Land Economics for spatial planning
- Economic principles of land uses
- Economic rent, land use and land values, market mechanism and land use pattern.

Unit 2: Development of Land hours 14

- Process
- Cost of development
- Source of finance
- Financial calculation for stakeholders.
- Analysis of location of specific uses like residential, industrial, commercial and institutional in the light of location theories in intra-regional and inter-regional context.

Unit 3: Economic Analysis
10.5 hours

- Techniques of cost benefit analysis of urban development programme
- Social costs and benefits
- Monetization of various costs and benefits
- Difference between financial and economic analysis

Unit 4: Land Management hours 14

- Stakeholders in Land Management
- Land Management Procedures and Institutions
- Techniques of Land Management
- Understanding of Government policies and programmes, legislation and Acts.

Essential Readings:

- Hong, Yu-Hung and Barrie Needham, “*Analyzing Land Readjustment: Economics, Law and Collective Action*”, Lincoln Institute of Land Policy
- A Evans, “*Economics, Real Estate and the Supply of Land*”, Wiley and Blackwell
- J Harvey, “*Urban Land Economics*”, Palgrave MacMillan
- A Kundu, “*Urban Land Market and Land Price Change: A Study in the Third World Context*”, Ashgate Publishing Company.
- P N. Balchin, G H. Bull and J L. Kieve, “*Urban Land Economics and Public Policy*”, Palgrave MacMillan

Suggested Readings:

- T M. Clauretje and G. Stacy, “*Real Estate Finance: Theory & Practice*”, , Cengage Learning
- “*The Modern Economics of Housing : A Guide to Theory and Policy for Finance and Real Estate*”
- D Denise and W C. Wheaton “*Urban Economics and Real Estate Markets*”, Prentice hall
- A O’Sullivan, “*Urban Economics*”, Mcgraw-Hill
- A. K. Jain, “*Urban Land Policy and Public-Private Partnership for Real Estate and Infrastructure Projects*”, Readworthy

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - IV

L	T	P	C
2	-	1.5	3

Course Code	2PL415
Course Title	TRANSPORTATION PLANNING

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

- Gain theoretical, and practical perspectives with respect to transportation planning.
- Understand and carry out and analyse different transportation surveys.
- Learn to design and develop basic road and transportation networks.

Syllabus:
hours: 52.5

Teaching

Unit 1: Transport System and its Development
10.5 hours

- Role and importance of transport
- Characteristics and role of various forms of transport systems - road, rail, air, water;
- Evolution of mass transport development in India, urbanization and transport demand, motorization trends

Unit 2: Road Capacity
hours

7

- Concept of PCU and level of service,
- Capacity of uninterrupted flow conditions,
- Factors affecting capacity and level of service;
- Capacity of rural and urban roads,
- Capacity at intersections.

Unit 3: Traffic Survey and Studies
hours

14

- Traffic Volume Count, origin destination survey, speed and delay study, parking surveys, road network inventory,
- Accident study - need, design of survey proforma, methods of conducting surveys, analysis and interpretation

Unit 4: Transport Facility Design
10.5 hours

- Roads: Road hierarchy, design control and criteria, geometric design elements, sight distance and control of access; at grade and grade separated intersections
- Parking: Parking space norms and standards, design standards for on-street and off-street parking facilities.
- Pedestrian Facilities: Capacity guidelines for at-grade and grade separated facilities, design considerations
- Cycling Facilities: Capacity guidelines and design considerations for cycle tracks
- Public Transport / Para Transit Facilities: Design standards for bus stops, auto rickshaw, taxi, cycle-rickshaw stands

Unit 5: Traffic Management and Control
10.5 hours

- Traffic Management measures; Arterial Management;

67

- Traffic Signs - principles, types and design considerations, road markings;
- Traffic Signals - types, optimal cycle length and signal settings, warrants;
- Regulation of Traffic - speed regulation, regulation of vehicle, parking regulations, Case Studies.

Suggested Readings:

- B.G. Hutchinson, (2011). “*Principles of Urban Transport Systems Planning*”, McGraw Hill
- C. S Papacostas, and P. D Prevedouros, “*Transportation Engineering and Planning*”, PHI Learning
- Dimitriou, T.H., (1990), (ed), “*Transportation Planning for Third World Countries*”, Routledge, London
- Jain A K, (2010). “*Urban Transport: Planning and Management*”, APH Publishing
- Kurt, Leibrant., (1970), “*Transportation and Town Planning*”
- L.R. Kadiyali, (2014). “*Traffic Engineering and Transport Planning*”, Khanna Publications
- David M. Levinson and Kevin J, Krize, (2008). “*Planning and Plexus: Metropolitan Land use and Transport*”, Routledge
- Stover, Vergil, Q.; Koepka, F., (1988), “*Transportation and Land Development*”

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - IV

	T	P	C
-	-	12	8

Course Code	2PL416
Course Title	INFRASTRUCTURE PLANNING STUDIO

Course Learning Outcomes (CLO):

At the end of the studio the students will be able to:
hours: 180

Teaching

- Learn about the concept of area planning.
- Comprehend the linkages between area planning and prioritization of physical and social infrastructure.
- Prepare area level plans integrating all provision of infrastructure.

Syllabus:

Unit 1: Perception Studies

Hours: 24

Contexts and complexities of issues in the thematic sectors

Studies of various infrastructure components of selected areas.

Unit 2: Exposure to relevant Case studies / Best Practices
Hours: 36

Comparative issues in respective components and sectors and draw lessons

Unit 3: Desk Studies
Hours: 24

- Study relevant plan documents for a city
- Over view of the basic infrastructure sector in the context of physical plans:
 - Water Supply
 - Sewerage
 - Storm water drainage and management
 - Solid Waste Management
 - Streetlights
 - Roads
 - Green/Open Spaces
 - Other Social facilities

Unit 4: **Detailed Physical and Social Infrastructure Assessment of Study Area**
Hours: 36

- Infrastructure and physical plan for area
- Built form character
- Land use pattern
- Environmental aspects in the study area
- Adequacy of basic services
- Equitable distribution of social amenities and open spaces
- Considerations for the urban poor
- Energy and resource conservation to create legible built form
- Develop a robust methodology for assessment of basic infrastructure and services
 - Review standards and guidelines
 - Data Collection primary as well as secondary
 - Analysis of data / information and its documentation

Identification of issues and challenges

Preparation of draft intervention plan

Unit 5: Area Planning Proposal and Infrastructure Plan

Hours: 60

- Area Planning proposal
 - Land use
 - Built form character
 - Road network
 - Open spaces and amenities
 - Mixed use areas
 - Integration of public spaces
 - Bicycle and pedestrian network
- Incorporating feedbacks on the assessment and intervention plan
- Draft area and infrastructure plan for the study area : physical character and institutional arrangements.
- Final area plan and conceptual infrastructure plan

Suggested Readings:

- Amin. A and Thrift. N., (2002), “*Cities : Re-imagining the Urban Polity*”, Cambridge
- Angotti, Thomas., (1993), “*Metropolis 2000 – Planning Poverty and Politics*”, Routledge, London,
- Brunn S.D.et al, (2012). “*Cities of the World: World Regional Urban development*”, Washington DC, Lanham, MD. : Rowman & Littlefield Publishers, Inc.,
- Davidoff, P., (1973), “Advocacy Planning and Pluralism in Planning”, in Faludi, A., (ed.), *A Reader in Planning Theory*, Pergaman Press, Oxford.
- Gary Bridge and Sophie Watson, (2000) “*A Comparison to the City*”, Blackwell Pub., Oxford

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - IV

Electives Semester IV

L	T	P	C
1	-	3	3

Course Code	2PL003
Course Title	RESEARCH METHODOLOGY

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

1. Carry out secondary literature review on areas of focus such as migration, demography, land use statistics, infrastructure management and pricing etc.
2. Develop method of secondary data collection and analysis
3. Acquire writing skills.

Syllabus:
hours: 45

Teaching

Unit 1

Literature Review

3 hours

- Selection of topic
- Working out objectives and rationale
- Literature: Sources of information, sources of data

Unit 2	Concepts and significance	6 hours
	<ul style="list-style-type: none"> • Pertinent definitions and concepts • Relationships with different sectors • Relevant Data: extraction of data and information 	
Unit 3	Written Skills – Report Writing	18 hours
	<ul style="list-style-type: none"> • Research questions, Aim and objectives of the research • Methods of primary data collection • Structure and outline of the report • Sequence of the content: introductory, developmental, transitional and concluding paragraphs, argumentative writing. • Format of Reports: preface, acknowledgements, contents, indexing, key word indexing, executive summary and abstract, introduction, body terminal section, appendices, references 	
Unit 4	Written communication types	9 hours
	<ul style="list-style-type: none"> • Communication type: difference between technical, scientific, legal and others; specific characteristics of writing technical reports • Articles and manuals • Planning and preparation of technical articles for publications • 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 	

Suggested Readings:

Agarwal, S.K; and Garg, R.K (eds.), (1988), “*Environmental Issues and Researches in India*”, Himanshu Publications, Udaipur

Alexander, Christopher (1977) "*Pattern Language: Towns, Buildings, Construction*"
reprinted 2015, Oxford

Alexander, Christopher, Neis, Hajo, Anninou, Artemis & King, Ingrid (1979) "*A New Theory of Urban Design*" reprinted 1999, Oxford

Bracken Ian (2008) "*Urban Planning Methods: Research and Policy Analysis*"
Routledge

Kumar, Ranjit (2014) "*Research Methodology: A Step-by-Step Guide for Beginners*"
Sage Publications Ltd.

Lynch, Kevin (1981) "*A Theory of Good City Form*" MIT Press

Sivaramakrishnan, K C, Kundu, Amitabh & Singh, B N (2015) "*Handbook of Urbanization in India*" Oxford University Press

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - IV

Electives Semester IV

L	T	P	C
2	-	1.5	3

Course Code	2PL004
Course Title	DEMOGRAPHY AND URBANISATION

Course Learning Outcomes (CLO):

At the end of the course students will be able to:

- Develop understanding about Study of Population.
- Gain insights into urban development trends across the world and in India.
- Learn about the inter relationship between demography & urbanization in India

Syllabus:
hours: 52.5

Teaching

Unit 1: Study of Population

Hours: 14

- Demographic variables-fertility, mortality - Measures of mortality
- Evolution of population study, contribution of Malthus
- Mortality-trends, mortality in developed and developing countries
- Biological and social factors and mortality-gender, race, social structure, life style, social status, occupation etc.
- Migration-types, theories, causes and consequences of population movement

75

- Methods of measuring volumes of migration
- Direct and indirect measures
- Source of demographic data, Census of India- info available at various levels, census methodology, accessing and using census information;
- Population structure and composition – age sex composition, sex ratio, dependency ratio, child-woman ratio; measures of age – sex structure, age – sex pyramid
- Marital status, caste region , literacy level, etc; life table techniques
- Population estimation, projection and population forecasting
- Basic cohorts survival model, inter regional cohorts survival model

Unit 2: World Urbanisation Trends and Urbanisation Patterns in India Hours:
14

- Urban revolution; its preconditions
- Brief history of urbanization in the world and urbanisation patterns in India, related problems, concepts of urbanism and urbanization
- Brief history of urbanization in India
- Mughal and British influences of India cities
- Post-independence urbanization
- Urbanization process as influenced by socio-cultural, political, economic and administrative factors; definition of urban centres, concepts of rural-urban continuum and dichotomy
- Census definition of urban places town, cities, town groups, urban agglomeration, Urbanisation economies, standard urban area metropolis, megalopolis etc. functional classification of urban places.

Unit 3: Settlement System and Role of Urban Area Hours:
14

- Settlement system, primate city, rank-size rule, central place concept, concepts of complementary area, central goods and services, range, threshold etc.
- City-region relationship
- Structure of city regions, area of influence, dominance
- Rural-urban fringes; its structure, stages of growth, its role in urban growth;
- Urbanization, industrialization and urban development

- Push and pull factors
- Migration trends and impacts on urban and rural development.

Unit 4: Urbanisation Policies in India
10.5

Hours:

- Urbanisation policy, basic issues in urbanization policy
- Urbanisation and Development
- Role of national and state level policies
- Five year plans
- Impact of Urbanisation on cities and towns, challenges for urban planners.

Suggested Readings:

- N. J. Habraken. *Form and Control in the Built Environment*. Cambridge, Mass.; London: MIT Press, 1998.
- Sitte: *Art of City Planning*
- Amin. A and Thrift. N., (2002), "*Cities : Re-imagining the Urban Polity*", Cambridge
- Angotti, Thomas., (1993), "*Metropolis 2000 – Planning Poverty and Politics*", Routledge, London,
- Brunn S.D.et al, (2012). "*Cities of the World: World Regional Urban development*", Washington DC, Lanham, MD. : Rowman & Littlefield Publishers, Inc.,
- Davidoff, P., (1973), "Advocacy Planning and Pluralism in Planning", in Faludi, A., (ed.), *A Reader in Planning Theory*, Pergaman Press, Oxford.Census of India Handbooks

TEACHING AND EXAMINATION SCHEME
B.ARCH.
SEMESTER V

<u>Sr</u> <u>:</u> <u>N</u> <u>o</u>	<u>Course</u> <u>Code</u>	<u>Course Title</u>	<u>Teaching Scheme</u>				<u>Examination Scheme</u>				
			<u>L</u>	<u>LP</u> <u>W/</u> <u>P</u> <u>W</u>	<u>T</u>	<u>C</u>	<u>Duration</u>		<u>Component Weightage</u>		
							<u>SE</u> <u>E</u>	<u>LP</u> <u>W/</u> <u>P</u> <u>W</u>	<u>CE</u>	<u>LPW</u> <u>/</u> <u>PW</u>	<u>SEE</u>
<u>1</u>	<u>2PL511</u>	<u>Infrastructure Planning - II</u>	<u>2</u>	<u>1.5</u>	<u>-</u>	<u>3</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>2</u>	<u>2PL512</u>	<u>Urban Ecology and Landscape Design</u>	<u>2</u>	<u>1.5</u>	<u>-</u>	<u>3</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>3</u>	<u>2PL513</u>	<u>Planning Laws and Legislation</u>	<u>2</u>	<u>1.5</u>	<u>-</u>	<u>3</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>4</u>	<u>2PL514</u>	<u>Urban Finance</u>	<u>2</u>	<u>-</u>	<u>-</u>	<u>2</u>	<u>3</u>	<u>-</u>	<u>0.60</u>	<u>-</u>	<u>0.40</u>
<u>7</u>	<u>2PL517</u>	<u>Urban Development Studio</u>	<u>-</u>	<u>12</u>	<u>-</u>	<u>8</u>	<u>-</u>	<u>-</u>	<u>0.60</u>	<u>0.40</u>	<u>-</u>
8	<u>2PL518</u>	<u>Training/ Summer Internship(6-8 weeks)</u>	<u>-</u>	<u>-</u>		<u>3</u>				<u>1</u>	
	Elective										
1	2PL005	Advanced Transportation Planning	2	1.5	-	3	-	-	0.40	0.20	0.40
2	2PL006	Advanced GIS	2	1.5	-	3	-	-	0.40	0.20	0.40
3	2PL007	Solid Waste Management	2	1.5	-	3	-	-	0.40	0.20	0.40
4	2PL008	Planning for Urban Informal Sector	2	1.5	-	3	-	-	0.40	0.20	0.40

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
2	-	1.5	3

Course Code	2PL511
Course Title	INFRASTRUCTURE PLANNING-II

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

- Understand the concept of infrastructure development policy.
- Understand the **fundamentals of costing and financing of infra projects.**

Syllabus:
hours: 52.5

Teaching

Unit 1 – Infrastructure Development Policy

- Meaning, components, contents, constitutional provisions, nation policy and legal framework
- Five-year plan related with infrastructure and current policies.

Unit 2 – Planning for Physical Infrastructure

- **Understanding of different infrastructure system, population and demand projections for water, sewerage and solid water infrastructure requirements.**

- Planning and design considerations, source, distribution, network, storage, disposal, physical infrastructure at city and regional level.
- Analysis and evaluation of alternatives for infrastructure systems.

Unit 3 – Infrastructure Costing and Financing

- Capital cost and operating and maintenance cost calculation for infrastructure.
- Financing policies covering local infrastructure development, fund for capital development, and analysis of pricing for services.
- Mechanisms for financing infrastructure (water supply, sewerage, solid waste), mechanisms for pricing different kinds of infrastructure,
- Best practices related to infrastructure finance.

Unit 4 – Planning for social Infrastructure

- Various types and levels of social infrastructure- education, health, safety, security and other public services.
- Policy context- existing norms and standards for various Indian cities and by various international agencies.
- Different indicator of quality of life, social infrastructure at city and regional level.

Essential Readings:

- J. W. Gifford, D.R. Uzarski and S. McNeil, “Infrastructure Planning and Management”, American Society of Civil Engineering,
- J. Parkin and D. Sharma, “Infrastructure Planning”, Thomas Telford Publishing, London.
- Goodman and M. Hartak, “Infrastructure Planning Handbook, ASCE Press.

Suggested Readings:

- W.R. Hudson, R.C.G. Hass, W. Uddin, “Infrastructure Management”, McGraw Hill

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
2	-	1.5	3

Course Code	2PL512
Course Title	URBAN ECOLOGY AND LANDSCAPE DESIGN

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

1. Comprehend the significance of natural environment and ecology in an urban context
2. Gain an understanding of the history, scope, and cultural contributions of landscape design in urban ecology
3. Learn and apply the knowledge of elements, processes and products of landscape design in site specific landscape proposal

Syllabus:
hours: 52.5

Teaching

Unit 1 Landscape Design principles and elements

- Introduction to Landscape Design in Public Places
- Historical cases of Landscape Design: monuments and cities
- Components of Landscape Design
 - Significance of site, topography and biodiversity
 - Agro-climatic zones and Macro-climate
- Landscape Design at different scales: small site features and grand vistas and nodes
- Hard landscapes and soft landscapes
- Vertical landscapes

Unit 2 Fauna in Landscape Design

- Understanding plant types and species
 - Nature, form and structure
 - Native versus alien species
 - Pros and cons of various species in terms of environmental sustainability (resource use and pollution abatement), maintenance, durability
 - Commonly used species in landscaping different elements of urban design – path, medians, edges, rotaries etc.
 - Commonly used species in residential landscaping
 - Identifying resource intensive species (mainly with regards to sunlight, water and nutrient resources)

Unit 3 Natural environment and the City

- Ecology and its components: natural features and biodiversity
- Ecosystem services of natural environment in human settlements
 - cultural and recreational
 - link to carbon sequestration
 - climate risk abatement
 - micro-climate management

- food security
- Ecological resources in a city
 - geographical features (water bodies, wetlands, forested areas, hilly terrain)
 - ecosystem services of biodiversity
- Urban land use contributing to natural environment – green cover and open spaces, urban agriculture, parks/ gardens and water fronts (lakes, rivers, canals and coasts)

Urban Policies for greening the environment

Suggested Readings:

- Anderson, S. I. (1994). Landscape architecture at the Royal Danish Academy of Fine Arts, Copenhagen, Denmark. *Landscape and urban planning*, 30(3), 169-177.
- Bell, S. (2012). *Landscape: pattern, perception and process*. Routledge.
- Crowe, S. (1956). *Tomorrow's landscape*. Architectural Press.
- Colvin, B. (1948). *Land and landscape*. J. Murray.
- Cooper, G., & Taylor, G. (2000). *Gardens for the Future: Gestures against the Wild*. Conran Octopus.
- Eckbo, G. (1964). *Urban landscape design*. McGraw-Hill.
- Groth, P. E., & Bressi, T. W. (Eds.). (1997). *Understanding ordinary landscapes*. Yale University Press.
- Harvey, S., & Fieldhouse, K. (Eds.). (2005). *The cultured landscape: Designing the environment in the 21st Century*. Taylor & Francis.
- Hopper, L. J. (Ed.). (2012). *Landscape architectural graphic standards* (Vol. 27). John Wiley & Sons.
- Jellicoe, G. (1975). Susan. The landscape of man. *Shaping the Environment from Prehistory to the Present Day*. New York: VNR.
- Kirkwood, N. (2004). *Weathering and Durability in Landscape Architecture*. John Wiley & Sons.
- Laurie, M. (1975). *Introduction to landscape architecture*. American Elsevier Pub. Co..
- Lyall, S. (1991). *Designing the new landscape*. Thames and Hudson.

- Lynch, K. (1960). *The image of the city* (Vol. 11). MIT press.
- Lynch, K., & Hack, G. (1984). *Site planning*. MIT press.
- Motloch, J. L. (2000). *Introduction to landscape design*. John Wiley & Sons.
- Relph, E. C. (1987). *The modern urban landscape: 1880 to the present*. JHU Press.
- Rubenstein, H. M. (1987). *guide to site and environmental planning*. Wiley.
- Strom, S., Nathan, K., Woland, J., & Lamm, D. (2009). *Site engineering for landscape architects*. John Wiley and Sons.
- Tuan, Y. F. (1979). Space and place: humanistic perspective. In *Philosophy in geography* (pp. 387-427). Springer Netherlands.
- Turner, T. (2014). *City as landscape: a post post-modern view of design and planning*. Taylor & Francis.
- Waterman, T. (2015). *The fundamentals of landscape architecture*. Bloomsbury Publishing.
- Weilacher, U., & Gloth, F. (1996). *Between landscape architecture and land art* (p. 102). Berlin: Birkhäuser.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
2	-	1.5	3

Course Code	2PL513
Course Title	PLANNING LAWS AND LEGISLATION

Course Learning Outcomes (CLO):

At the end of the course student would be able to:

1. Learn basics of necessary building bye-laws and legal definition related to the same
2. Comprehend the role of various statutory authorities responsible in for urban development and standard procedures for building/ scheme plan approval and whetting
3. Apply knowledge of building and plan approval processes

Syllabus:
hours: 52.5

Teaching

Unit 1 Introduction to Development Control and Building Regulations

- History of building regulations and need for development control guidelines (early post-industrial cities; safety, health and hygiene concerns)
- Definitions / General Building Requirements & Services.
- Requirement for Parts of the Buildings
- Building Services

Unit 2 Zoning regulations and guidelines

- Development codes & planning norms
- General as well as Specific Premises - Commercial / Industrial plots, Transportation (Development controls on Transport Terminals / Public - Semi Public)
- Notified Areas, NOCs
- Various stages of TPS (original plot to final plot and consultations)

Unit 3 Building Bye-laws and Documentation

- Jurisdiction, ownership and documentation
- Building bye laws and Codes, FSI, Ground coverage, Building heights
- Specific requirement as per Building Sites - Provisions for differently-abled, elderly & children.
- Signing of Plans, Notice for alterations, Building Permit Fees, Sanctions, Procedures during Construction works, Notice for Completion, Completion/ Permission for Occupation, Occupancy/ Part Completion Certificate, Connection to the municipal sewer/ water mains, Fire Protection & Fire safety Requirements

Unit 4 Procedures for obtaining Building Permit

- Notice, Copies of Plans & Statements, Information accompanying Notice, Documents / Size of Drawing Sheets & colouring notations for Plans, Dimensions, etc.
- Development / Change of Use/ Occupancy/ Reconstruction
- Building Permissions before and after construction
- Clearances and NOCs

Unit 5 Green Building Regulations and sustainability provisions

- Efficient use of resources, rainwater harvesting, water reuse and recycling
- Solar energy in buildings and large sites
- Integration of Environment clearances on sites of different scales

Suggested Readings:

- Bureau of Energy Efficiency (2007) *“Energy Conservation in Building Code”* Ministry of Non-renewable Energy, Government of India
- Dekay, Mark (2014) *“Sun, Wind and Light: Architectural Design Strategies”* USA: John and Wiley Sons Inc.
- Evans, Martin (1980) *“Housing Climate and Comfort”* London: Architectural Press
- General Development Control Regulations – GDCR for AUDA
- Handbook on Functional Requirements of Buildings; Bureau of Indian Standards
- Koenigsberger, Otto, Ingersoll, T. G., Mayhew, Alan & Szokolay, S. V. (2013) *“Manual of Tropical Housing & Building”* Hyderabad: Universities Press Private Limited
- Laureano, Pietro (2013) *“Water conservation techniques in traditional human settlements”* Ghaziabad: Copal
- Majumdar, Mili (2001) *“Energy Efficient Building in India”* New Delhi: The Energy and Resources Institute.
- MoUD, 2016, UDRPFI Guidelines
- Model Building Bye Laws 2016; Town & Country Planning Organisation; Ministry of Urban Development, Govt. Of India 2016.
- National Building Code of India, 2016; Bureau of Indian Standards.

- Nayak, J K, Hazra, R, Prajapati, J. (1999) “*Manual On Solar Passive Architecture*” New Delhi: Solar Energy Centre, MNES, Gov. Of India
- Shah, M G, Padki. S Y & Kale, C M (2002) “*Building Drawing: with an Integrated Approach to Built Environment*” New Delhi: Tata McGraw-Hill Education

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
2	-	-	2

Course Code	2PL514
Course Title	URBAN FINANCE

Course Learning Outcomes (CLO):

At the end of the course student would be able to:

1. Acquire basic knowledge of principles that determines urban finance
2. Learn assessment of financial situation in cities and its impact
3. Understand and Apply alternative financing mechanism to finance functioning of cities

Syllabus:
hours: 30

Teaching

Unit 1: Municipal Finance

- Nature and composition of income and expenditure, limitations and need for revenue enhancements;
- Expenditure control methods and mechanisms;
- Budgetary allocation from Central and State Governments for urban development;
- Assistance from foreign donors and Multi National agencies; Market access;

Pool finance and prerequisite conditions for accessing nontraditional funds.

- Multilateral and bilateral funding from international organisations.
- An overview of Plan and Non Plan Financing (Planning Commission and Finance Commission);
- Categorisation of Municipal Sources of Revenue: Internal Vs. External Revenue, Capital Vs. Revenue Receipt; Municipal Finance Assessment Framework; Reforms in Municipal Finance.

Unit 2: Funding sources

- Types of partnership approaches;
- Privatization of civic services;
- Emerging cost effect technology interventions;
- User charged projects; Pricing of services.

Unit 3: Resources Based on Achievement of Urban Reforms

- Role of state government and urban local bodies;
- City's challenge fund; Urban reforms; Implications on resources, incentive fund and state level pooled finance development fund.

Unit 4: Institutional Capacity Enhancement

- Better finance management, management process;
- Accounting and budgeting, asset management, receivables management, cost centre approach;
- Computerization as tool for resource enhancement;
- Role of Management Information Systems.

Unit 5: Plan forms and Indices

- Financial operating plan, city corporate plan;
- Development of urban indicators;
- Infrastructure pricing and financing – financing mechanisms in addition to tax and grants;

Unit 6: Public Private Partnership

- PPP – indispensability; PPP – risk profile, constraints and preconditions;
- Overview of best PPP practices in urban development;
- Various forms of PPP – management contract, service contract, lease, divestiture and concessions; Strengths and weaknesses of each form of PPP;
- Competitive bidding process and documentation (EOI, RFQ, PIM, DCA, RFP);
- Bankability of PPP project; Equity investment; Refinancing; Sources of PPP funding, impact fee, subsidies.

Essential Readings:

- Anwar Shah (Ed). 2006. Local Governance in Developing Countries. The World Bank. Washington D.C.
- Anwar Shah (Ed). 2007. Local Budgeting. The World Bank. Washington D.C.
- Bird Richard M. (1994). “Financing Local Services: Patterns, Problems, and Possibilities”, Paper presented for Global Report on Human Settlements, April.
- Bird, Richard and Vaillancourt, Francois (1998). Fiscal Decentralization in Developing Countries, Cambridge: Cambridge University Press.
- Deborah L. Wetzel. 2013. Financing Metropolitan Governments in Developing Countries. Lincoln Institute of Land Policy, Cambridge
- George Peterson and Patricia Annez. Financing Cities. Sage Publications. New Delhi.
- Jorge Martinez-Vazquez, and Joan Youngman. 2008. Making the Property Tax Work: Experiences in Developing and Transitional Countries. Lincoln Institute of Land Policy. Cambridge.
- Mohanty P K. et al, Municipal Finance in India – An Assessment, Reserve Bank of India
- Mohanty P K., (2016), Financing Cities in India: Municipal Reforms, Fiscal Accountability and Urban Infrastructure. SAGE India.
- Municipal Finance – A Handbook for Local Government Practitioners, World Bank
- O.P. Mathur et al, Costs and Challenges of Local Urban Services: Evidence from Indian Cities, Oxford University Press

- Om Prakash Mathur. 2011. Municipal Finance Matters: India Municipal Finance Study. ADB Website.2012. Intergovernmental Transfers in Local Government Finance. A Report to the UN-HABITAT. Unpublished. NIUA. New Delhi.
- Ramesh G, Nagadevara V, Naik G, Suraj A B., (2010), Public Private Partnership, Taylor and Francis Books India Ltd
- Reddy V, Sridhar K. S., (2010), State of Urban Services in India's Cities – Spending and Financing, Oxford University Press.
- Roy W. Bahl and Johannes F Linn. 1992. Urban Public Finance in Developing Countries. A World Bank book. Oxford University Press. New York.
- Sudipto Mundle, Public Finance: Policy Issues for India, Oxford University Press
- Swianiewiaz, Pawl (Ed). 2004. Local Government Borrowing: Risks and Rewards. Open Society Institute Budapest. Hungary.
- Wallace E. Oates. 2001. Property Taxation and Local Government Finance. Lincoln Institute of Land Policy. Cambridge.
- Wellman K, Spiller M., (2012), Urban Infrastructure: Finance and Management, Wiley.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
-	-	12	8

Course Code	2PL517
Course Title	URBAN DEVELOPMENT STUDIO

Course Learning Outcomes (CLO):

At the end of the course students will be able to:

1. Synthesize knowledge and skills obtained in the core courses in planning in order to prepare a plan for an urban settlement
2. Get involved in a practicum to understand the association amongst land, demography, environment, economy and equity in an urban settlement
3. Formulate alternatives planning interventions.

Syllabus:

Teaching

Hours: 180

Unit 1 - Introduction

The Urban Development Studio (UDS) gives undergraduate students their first exposure to the preparation of a development plan for an urban area. This studio looks at the planning process through a project of an urban development plan of a small town in Gujarat. A city level development plan, indicating broad direction in which the city would develop and would include statement on the economic base, physical direction

of growth, population characteristics envisaged, and ideas about sustainability and equity. Students should expect to learn and apply basic principles of urban planning, and engage in key debates in the profession as part of this studio.

Today, one of our greatest challenges is planning dealing with the rapid growth of our urban areas. Urban planning, a subset of planning, is primarily concerned with the public realm and the people of an urban area or a city. In order to ensure good quality of life for people, planning for public realm includes the following major components:

- Land use and built form regulations
- Transport infrastructure and its networks
- Utility infrastructure (water, sanitation, drainage, and solid waste collection)
- Housing and urban renewal

The above components invariably involve the following over-arching themes:

- Environmental sustainability, social equity and participatory planning

Unit 2 - Comprehensive urban development plan

With reference to the Gujarat Town Planning and Urban Development Act (GTPUDA), 1976 provides an integrated framework for defining an agency, empowering it to plan, and providing it a mechanism to implement its plan. The Development Plan as envisaged by GTPUD act of 1976 is a comprehensive strategic document for the development of the city. It is expected to address a variety of city-wide issues besides growth management in the periphery, for example, zoning and infrastructure development in the existing areas, urban transport and policies for issues such as economic development, urban regeneration and environmental protection. Its preparation also allows for limited public participation. Presently in the cities of Gujarat, like many other Indian cities, a development plan is prepared every ten years, and then micro-planning is taken up at the periphery through the tool of town planning schemes.

The studio will focus on preparing a development plan for next 10 years in a small town. The students will be asked to imagine themselves as the ‘town planning officer’ (TPO) appointed for a particular town with the responsibility of preparing the development plan consisting on land use strategies, transport and infrastructure network development. The development plan preparation is a rational outcome of a process that carefully balances the needs of people, conflicting interests, efficient public systems, financial or administrative constraints with the broad goals of sustainability and social equity.

The students will be encouraged to explore how traditional planning techniques such as preparation of general plans and zoning codes may be adapted to promote goals of sustainability and quality urban living. They will be encouraged to explore the new or innovative planning tools that can be useful for sustainable urban development. One of the most unsustainable dimension of urban development is energy and resource use and the waste, pollution and greenhouse gas emissions that usually result from this consumption.

The rising inequity is another issue rooted in the current pattern of urban development. The focus therefore will be to develop a comprehensive plan that can integrate dimensions of environmental and social sustainability. On the temporal scale, the studio will focus on the development of a long-term vision and identify strategies that work for both, long term as well as short term.

The students will also carry out literature review, study of norms and guidelines and case-studies. The critical literature review will give them understanding about some crucial urban issues and the standards or norms. The case studies will help them to draw parallels between different contexts and learn methodologies or ideas about the plan-making.

Unit 3 - Major stages of the studio

- **Project brief (4th week):** The first major task for the studio is to have conceptual knowledge regarding the project brief with understanding of aims,

objectives, methodology, constraints, scope of work, literature study etc. Each group would undertake number of field visits to their respective towns and assess the problems and potentials in their area. The students will work with Google maps, photographs and quick presentation formats to work out the first set of proposals. At the end of fourth week, draft conceptual plans will be presented to lab coordinators.

- **Conceptual plan (8th week):** At the end of draft conceptual plan, the students will be ready to question their assumptions and will have a clearer idea about the data gaps. They will be then collect data regarding demographic, socio-economic, economic activities, physical and social infrastructure. A thorough analysis of data would establish the existing situation of each study area, and the issues would be identified. Students will also be required to share their learning from different towns to enable cross-learning between groups other student groups. At the end of this stage, the students will make one more attempt at the conceptual development plans. This time the effort will be based on more informed ideas. Each group will present their findings to a small group of internal faculty members. The proposed conceptual plan for the selected town should contain the following components:
 - Goals and vision for the development plan
 - Analysis of existing conditions (including demographics, land use, buildings and neighbourhoods, streets and transport, infrastructure etc.)
 - Develop future scenarios and visions (depending on population, economy and activity estimates in future)
 - Conceptual Proposals (land use, buildings and neighbourhoods, streets and transport, infrastructure, etc.)

- **Draft development plan (12th Week):** This is a crucial stage of the studio work. At this stage, the students will improve their previous proposals and finalize their data analysis. In addition to the previous proposals, the students will also articulate some preliminary ideas about costing and revenue generation strategies for the ward plan. No further data collection should be required after this stage unless the group leaders feel it is necessary. A group of faculty

members (not part of the studio directly) will review this stage of work and the internal marks will be declared.

Each group would start working towards a draft development plan for the study area. The draft plan would include all components discussed in the studio:

- Economic activities and demographic projections
- Land use and built-form, development control regulations
- Transport: Road and public transport
- Slums and informal sector
- Utility infrastructure and services
- Urban design projects (selected)
- Costing and revenue generation strategy (schematic)

Students are encouraged to develop cross-cutting themes of environmental sustainability and social equity.

- **Final Submission and final jury (16th week):** The draft development plan will be further refined. A phasing strategy for the proposed development with supporting financial analysis will be prepared. Each group will submit a report including maps of proposals, existing situation analysis and ward profile. The final outcome of the studio will be presented to the external jury members in the form of a group presentation.

Suggested Readings

- Adam Smith (1776), *Inquiry in to the nature and cause of the wealth of nations*
- Adhvaryu, B. (2011). The Ahmedabad urban Development Plan-making process-- A critical review. *Planning Practice and Research*, 26(2), 229–250
- Alain Bertaud, "The Use and Value of Urban Planning" at <http://alain-bertraud.com/>

bertaud.com/AB_Files/AB_Transcript_1_use_urban_planning.pdf

- Bellaney S and Patel B. (2009) Using the 'Development Plan- Town Planning Scheme' Mechanism to Appropriate Land and Build Urban Infrastructure. Chapter 24. In India Infrastructure Report. Oxford University Press
- David McCandless (2000), Information is Beautiful: Collins
- Diamond, Jared (2005), Collapse How Societies Choose to Fail or Success
- Edward R. Tufte (1992), The Visual Display of Quantitative Information: Graphics
- Elias, Norbert (1939), The Civilizing Process: Sociogenetic and Psychogenetic Investigations
- MoHUA (2014) Urban and Regional Development Plans Formulation and Implementation Guidelines. India
- Jacobs, Jane (1961), The Death and Life of Great American Cities: Vintage
- Jane Jacobs (1970), Economy of Cities: Vintage
- Jerry Brotton (2012), A History of the World in Twelve Maps: Allen Lane
- Robert Bruegmann (2006), Sprawl: A Compact History: University Of Chicago Press
- Stephen Marshall (2004), Streets and Patterns: Routledge
- Steve Graham, Simon Marvin (2001), Splintering Urbanism: Networked
- Swati Dutta, Suchandra Bardhan and Sanjukta Bhaduri (2013) Patterns of Urbanization and Environmental Quality in the Context of Indian Cities Environment and Urbanization Asia 4: 287
- UN Habitat (2009) Planning Sustainable Cities. Global Report on Human Settlements. UN Human Settlements Programme. Earthscan UK
- UN Habitat (2012): Urban planning for the city leaders
- Wheeler S.M and Beatley T. (2009) The Sustainable Urban Development Reader. Second Edition. Routledge NY

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
-	-	240	3

Course Code	2PL518
Course Title	TRAINING/ SUMMER INTERNSHIP (6-8 WEEKS)

Course Learning Outcomes (CLO):

At the end of the training period the student would have:

1. an exposure to the professional working environment
2. an opportunity to strengthen their core areas of interest, skills and knowledge in the remaining duration of study following the training period

Syllabus:
minimum

Teaching hours: 240

Description:

The students would proceed for Planning Internship after the end semester examination of fourth semester. The internship could be in any planning / development organization / consultancy firms/NGO/R&D cells of institutes/International NPO. The organisation / institution of training will be decided in consultation with the Coordinator-in-charge of Training and Placement. This will help them to develop an understanding of the process and methods of undertaking live planning projects.

They would participate in the multi-disciplinary team of a live planning project. They would understand various aspects of spatial planning including exploring specialised fields. Upon the completion, students would be able to make use of the experience gathered in the internship in studio exercises and other subjects. They would be able to find the individual knowledge and skill gap and take corrective measures thereof.

Training Tasks:

- Students shall work on project/s related to urban planning or any specialization such as rural planning, industrial area planning, infrastructure planning, environmental planning, transportation planning, real estate, housing and other related disciplines.
- Students would submit the Training Completion and the Evaluation Certificate compulsorily from the relevant organization / consultancy after completion of training.
- Students will submit a report containing the nature of engagement and work carried out.
- Students would be evaluated by an internal panel of experts on the basis of the report, portfolio of work and the Evaluation Certificate at the time of Viva-Voce to be conducted during fifth semester.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
2	-	1.5	3

Course Code	2PL005
Course Title	ADVANCED TRANSPORTATION PLANNING

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

1. Understand the relation between urban form and urban structure with transport system.
2. Enable to estimate future travel demand for long terms transport projects.
 - Apply various local, state and national level transport policies.

Syllabus:
hours: 52.5

Teaching

Unit 1 – Urban Structure and Transport System

- Types of Urban Form and Structure, Impact of urban form and structure on transport system development.
- Urban structure and mobility levels, concept of accessibility, land use - Transport Cycle,
- Transit Oriented Development (TOD), best international practices of TOD.

Unit 2 – Comprehensive Transport Planning

- Study area definitions, surveys and studies, survey techniques
- Transport planning process – trip generation, trip distribution, modal split, trip assignment
- Land use transport models,
- Comprehensive Mobility Plan (CMP) Components, Case studies

Unit 3 – Transport and Environment

- Traffic noise, air pollution - factors affecting, abatement measures, standards
- Traffic Safety- accident reporting and recording systems, factors affecting road safety
- Transport Planning for Target groups - Children, adults, handicapped and women
- Norms and Guidelines for highway landscape; Street lighting type - standards and design considerations

Unit 4 – Public Transport

- Urban passenger transport system characteristics, public transport modes (BRTS, MRTS, LRTS, MONO Rail, RRTS), genesis of public transport system, mass transit system.
- Demand for public transport, public transport demand and supply indicators, determinants of public transport supply and demand, public transport supply and demand characteristics in cities of various sizes and socio economic setting,
- Form, type and density of bus route network, bus route network planning principles.
- Bus stops –types and characteristics, planning guidelines, pedestrian –public transport interface
- Bus Terminals – types, assessment of facilities and land areas for terminals; interchange- concepts, function and planning guidelines.

Unit 5 – Non-Motorized Transport

- Role of Non-motorized transport, status of NMT in Indian cities
- Pedestrian facility design: Footpath, Zebra crossings, Foot over bridge, under pass, Pedestrian precincts, Pedestrian actuated signals.

Unit 6 – Transport Policy and Management

- Review of national, state and local level transport policies and their relevance in spatial and economic planning
- Pricing and funding of transport systems; energy and environment implications in transport
- Existing organizational and legal framework, transport co-ordination
- Transport System Management (TSM) Plans.

Essential Readings:

- Kadiyali, L.R., Traffic Engineering and Transport Planning, Khanna publishers.
- M. Bruton, “Introduction to Transport Planning”
- Vukan R. Vuchic, Urban Transit: Operations, Planning and Economics, Wiley Sons Publishers.
- National Urban Transport Policy

Suggested Readings:

- IRC 2012, Guidelines For Pedestrian Facilities
- Urban street design guidelines - ITDP India
- IRC 11-2015, Design and layout of cycle tracks
- Salter, R J., Highway Traffic Analysis and Design, ELBS.
- Edward K. Morlock, Introduction to Transportation Engineering & Planning, International Student Edition, Mc-Graw Hill Book Company, New York.
- Motor vehicle act, NHAI Act,

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
2	-	1.5	3

Course Code	2PL006
Course Title	ADVANCED GIS

Course Learning Outcomes (CLO):

At the end of the course the students will be able to -

- Get an introduction to the basic concepts of GIS, data structures
- Use ESRI ArcGIS software with spatial data
- Know the basic concepts of cartography and the presentation of spatial data
- Apply the basic concepts in the analysis of spatial data and applications of GIS in Planning

Syllabus:

hours: 52.5

Teaching

Unit 1 – GIS Functions

- Creating and Editing GIS data, Geocoding
- Scale, Projection and Coordinate Systems
- Distance measurement and descriptive spatial statistics
- Tools for GIS based analysis in Urban and Regional Planning

Unit 2 - GIS Data Structures

104

- Querying, selecting, joining, and calculating data

Unit 3: Basics of Cartography

- Basics of Cartography & Data Classification and Symbology

Unit 3 – Data Utilization and Analysis

- Spatial data processing
- Census Data for GIS & GIS data and analysis for planning and public policy
- Mapping Data & Data acquisition and preparation
- Measuring Network Distance and Cost
- Using and Sharing GIS Data Online

Unit 4 – Applications of GIS in Planning

- Change detection using vector and raster data
- Multiple Criteria Evaluation for Planning & Public Policy
- Solving Location-Allocation Problems

Suggested Readings:

- Gorr, W. L., & Kurland, K. S. (2013). *GIS Tutorial 1: Basic Workbook. 10.3 edition* Redlands, CA: ESRI Press.
- Allen, D. W. (2013). *GIS Tutorial 2: Spatial Analysis Workbook, 10.3 edition* Redlands, CA: ESRI Press.
- Mitchell, A. (1999). *The ESRI guide to GIS analysis: geographic patterns & relationships* (Vol. 1). Redlands, CA: ESRI.
- Mitchell, A. (2005). *The ESRI guide to GIS analysis: spatial measurements &*
- Clarke, K.C. (2011). *Getting Started with Geographic Information Systems. Fifth Edition.* Prentice Hall.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
2	-	1.5	3

Course Code	2PL007
Course Title	SOLID WASTE MANAGEMENT

Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

1. Understand problems of municipal waste, biomedical waste, hazardous waste, e-waste, industrial waste etc.
2. Have knowledge of legal, institutional and financial aspects of management of solid wastes.
3. Be aware of environment and health impacts solid waste mismanagement.
4. Incorporate SWM policies successfully in planning decisions

Syllabus:
hours: 52.5

Teaching

Unit 1 – Solid Waste: An Introduction

- Definition of solid wastes, types of solid wastes, sources of solid wastes - industrial, mining, agricultural and domestic,

106

- Characteristics of solid wastes, physical, chemical and biological characterization,
- Methods of sampling, factors affecting the generation of solid waste, projection for future,
- Effects of improper disposal of solid waste public health effects, impact on environmental health, future challenges and opportunities

Unit 2 – Solid Waste Management Process

- Principle of solid waste management, hierarchy of waste management options, integrated solid waste management,
- Physical and chemical composition of municipal solid waste,
- Different methods for generation rates, quantity assessment of solid wastes.
- On-site Storage and Processing: On-site storage methods, materials used for containers, movable bins, fixed bins, home to home collection, community bin system, theory and design of hauled container system, stationary container system,
- Analysis of collection system, guidelines for collection route layout, on-site segregation of solid wastes.

Unit 3 – Transfer and Processing Techniques

- Transfer stations - types and selection of location, operation and maintenance,
- Labeling and handling of different solid wastes-hazardous waste, biomedical wastes, radioactive waste, E-wastes,
- Processing of solid waste at residence e.g. Storage, conveying, compacting, Shredding, pulping, granulating etc. Processing of solid waste at Commercial and industrial site.
- Transport methods via handcart, tri-cycle, animal cart, tripper truck, dumper placer, bulk refuse carrier, railroad transport.
- Engineering system for on-site handling and processing of solid waste-separators, size reduction equipments, screening equipments, densification, baling, cubing, pelleting equipments.

Unit 4 – Disposal Methods of Solid Waste

- Biological and chemical techniques for energy and other resource recovery:
- Composting types of composting, process description, design and operational consideration of anaerobic composting, vermicomposting, termigradation, fermentation, incineration and pyrolysis
- Land filling: Dumping of solid waste, site selection criteria, landfill layout, landfill sections, occurrence of gases and leachate in landfills- composition and characteristics, generation factors, initial adjustment phase, transition phase, acid formation phase, methane formation phase, maturation phase of gases and leachate, leachate and its control, control of contamination of ground water etc

Unit 5 – Contemporary Issues of SWM

- Solid waste management issues globally and in Indian cities.
- Various social aspects of the solid waste management, individual and community participation, involvement of NGOs and private players in efficient solid waste management.
- Solid waste management rules, Acts and regulations.
- Case studies of best practices observed globally.
- Cost economics of solid waste management.

Suggested Readings:

- B. Bilitewski, G. HardHe, K. Marek, A. Weissbach, and H.Boeddicker, (2010) "*Waste Management*", Springer, Berlin.
- Batstone R., Smith J.E. (Jr.) and Wilson D. (1989) *The Safe Disposal of Hazardous Wastes-the Special Needs and Problems of Developing Countries*, The World Bank Technical Paper No. 93, Vol. I, II and III, Washington, DC, The World Bank.
- Bhide, A.D. and Sundaresan, B.B, (1993), "*Solid Waste Management in Developing Countries*", INSDOC
- Criteria for hazardous waste landfills – CPCB guidelines 2000.
- Datta, M., (2001), "*Waste Disposal in Engineered Land fills*", Narosa Publishers, New Delhi
- Frank Flintoff, *Management of Solid waste in developing countries*, WHO regional publications
- Freeman H.M. (1988) *Standard Handbook of Hazardous Waste Treatment and Disposal*, New York, McGraw-Hill.

- Guidelines for Management and Handling of Hazardous wastes, MoEFCCC (1991), Govt. of India.
- Manual on Municipal Solid Waste Management, CPHEEO, Ministry of Urban Development, Government of India, New Delhi.
- Pavoni, Solid Waste Management Hand Book
- Prüss A., Giroult E. and Rushbrook P. (1999) Safe Management of Wastes from Health-care Activities, Geneva, World Health Organization.
- R. E. Landreth and P. A. Rebers,: "Municipal Solid Wastes - Problems and Solutions", Lewis Publishers, 1997
- Tchobanoglous, G., Theisen, H., and Vigil, S.A, (1993), "*Integrated Solid Waste Management*", McGraw Hill, New York
- Ven Te Chow, Solid Waste Engineering, Principle & Management issues
- Vesilind P.A., Worrell W.A. and Reinhart D.R. (2001) Solid Waste Engineering, Australia, CLEngineering.
- Waste Management "Asian and Pacific Center for Transfer of Technology (N.D.) India", September 1993.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - V

L	T	P	C
2	-	1.5	3

Course Code	2PL008
Course Title	PLANNING FOR URBAN INFORMAL SECTOR

Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

1. Differentiate between different variants of urban informal activity and urban poverty.
2. List the crucial infrastructural and institutional support for urban informal sector.
3. Measure urban poverty index and map the hotspots of urban poverty
4. Plan for the informal sector

Syllabus:
hours: 52.5

Teaching

Unit 1 - Understanding Urban Informal Sector

- Basic concepts, definition of informal sector; Different variants of urban informal activity;
- Segmentation and heterogeneity, Identification of vulnerable segments – child labourers, differently abled, old aged etc.
- Role of Informal Sector in Cities, Spatial Focus on Informal Sector, socio-economic deprivation and informal sector; poverty and informality in historic

110

areas;

- Policies and practices in dealing with the informal sector in India and abroad (e.g. National Policy on Urban Street Vendors, NCEUS, others), relationship between informal economy and housing, home-based economic activities

Unit 2 - Understanding Urban Poverty

- Appreciating urban poverty – absolute and relative poverty;
- Poverty measurement; Cumulative deprivation of urban poverty; Mapping of urban poor;
- Dimensions of urban poverty, magnitude of problem,
- Urban poverty alleviation programmes,
- Impact of macro-economic structural adjustment policies on poor urban households.

Unit 3 - Supportive Infrastructure for Urban Informal Settlement and Economy

- Securing occupational health and safety of informal sector employees;
- Social protection – social security and social insurance;
- Financial inclusion: promotion of micro credit and community thriftiness
- Alternative approaches for delivery of basic services to the urban poor
- Community planning approach, low cost alternatives and institutional reforms approach.

Unit 4: Land and Informality

- Spatial justice to urban informal economy – statutory allocation of urban land to urban informal activity;
- Identification of hot spots of urban poverty- ghettoisation; The economics of location of informal settlements

Unit 5 - Planning for Informal sector

- Policy framework for addressing the challenges of informal economy,
- Planning provisions and norms, policy for household industry, street vending

111

etc. and its implications for norms and standards at city level.

Suggested Readings

- India Urban Poverty Report 2009 by India, Ministry of Housing and Urban Poverty Alleviation, Publisher: Oxford University Press 2009
- Inclusive urban planning state of the urban poor report 2013 by India, Ministry of housing and urban poverty alleviation, Publisher: New Delhi Oxford Uni. Press 2014
- India's reforms : how they produced inclusive growth, Book by Bhagwati, Jagdish Ed; Panagariya, Arvind Ed., Publisher: Madras, Singapore etc Oxford Uni. Press 2012
- Informal city: inclusive growth for poverty alleviation, Book by Jain, A. K., Publisher: New Delhi Readworthy Publication Pvt. Ltd. 2011
- Land policies for inclusive growth, Book by Haque, T. Ed., Publisher: New Delhi, Concept Pub. Co. 2012
- Basic services and the urban poor, Book by National Resource Centre on Urban Poverty, Publisher: Bombay, New Delhi etc All India Institute of Local Self Government 2007
- Affordable housing reader, Book by Tighe, Rosie J. Ed; Mueller, Elizabeth J. Ed., Publisher: London & New York Routledge 2013
- Building from the bottom : infrastructure and poverty alleviation, Book by Kochhar, Sameer Ed; Ramachandran, M. Ed., Publisher: New Delhi Academic Foundation
- 2010
- Are you being served? : new tools for measuring service delivery Book by Amin, Samia & others., Publisher: Washington D.C. World Bank 2008
- Developing sustainable and inclusive urban infrastructure services a guidebook for project implementers and policy makers in India by United States Agency for International Development (USAID), Publisher: Silver spring TCG International 2011
- Eleventh five year plan (2007-2012): inclusive growth. Vol.1, Book by Planning Commission; Government of India, Publisher: Madras, Singapore etc Oxford Uni. Press 2008
- In search of inclusive policy: addressing graded inequality, Book by Thorat, Sukhdeo Ed; Kumar, Narender Ed., Publisher: Jaipur, New Delhi etc Rawat Pubs. 2008

- Child-work, poverty and underdevelopment, Book by Rodgers, Gerry Ed; Standing, Guy Ed., Publisher: Geneva, New Delhi etc International Labour Organization. 1980
- Chronic poverty in India : an overview, Book by Mehta, AashaKapur; Shah, Amita, Publisher: New Delhi Indian Institute of Public Administration & Chronic Poverty Research Centre 2004
- Cities for children : children rights, poverty and urban management, Book by Bartlett, Sheridan & others, Publisher: London United Nations Children's Fund; New York & Earthscan Pub. Ltd. 1999
- Combining the quantitative and qualitative approaches to poverty measurement and analysis : the practice and the potential. Book by Carvalho, Soniya; White, Howard, Publisher: Washington D.C. World Bank 1997
- Empowerment and poverty reduction : a source book. Book by Narayan, Deepa Ed. Publisher: New Delhi World Bank ; Washington & Rawat publications 2005
- India: urban poverty report 2009 Book by India, Ministry of Housing & Urban Poverty Alleviation. Publisher: Madras, Singapore etc Oxford Uni. Press 2009
- Resource material on integrated slum development programme in urban centres. Book by Regional Centre for Urban and Environmental Studies (RCUES). Publisher: Bombay, New Delhi etc All India Institute of Local Self Government 2007
- Street vendors in the global urban economy Book by Bhowmik, Sharit K. Ed. Publisher: New Delhi Routledge 2010
- Vendors and informal sector : a case study of street vendors of Surat city Book by Ray, Chandranath N; Mishra, Aseem. Publisher: Ahmedabad Centre for Urban Equity, CEPT Uni. 2011

TEACHING AND EXAMINATION SCHEME
B.ARCH.
SEMESTER VI

<u>Sr. No.</u>	<u>Course Code</u>	<u>Course Title</u>	<u>Teaching Scheme</u>				<u>Examination Scheme</u>				
			<u>L</u>	<u>LPW/PW</u>	<u>T</u>	<u>C</u>	<u>Duration</u>		<u>Component Weightage</u>		
							<u>SEE</u>	<u>LPW/PW</u>	<u>CE</u>	<u>LPW/PW</u>	<u>SEE</u>
<u>1</u>	<u>2PL611</u>	<u>Regional Planning</u>	<u>2</u>	<u>=</u>	<u>=</u>	<u>2</u>	<u>3</u>	<u>=</u>	<u>0.60</u>	<u>=</u>	<u>0.40</u>
<u>2</u>	<u>2PL612</u>	<u>Disaster Management and Climate Change</u>	<u>2</u>	<u>1.5</u>	<u>=</u>	<u>3</u>	<u>3</u>	<u>=</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>3</u>	<u>2PL613</u>	<u>Natural Resources Management</u>	<u>2</u>	<u>=</u>	<u>=</u>	<u>2</u>	<u>3</u>	<u>=</u>	<u>0.60</u>	<u>=</u>	<u>0.40</u>
<u>4</u>	<u>2PL614</u>	<u>Project Formulation, Appraisal and Management</u>	<u>2</u>	<u>1.5</u>	<u>=</u>	<u>3</u>	<u>3</u>	<u>=</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>5</u>	<u>2PL617</u>	<u>Regional Planning Studio</u>	<u>=</u>	<u>12</u>	<u>=</u>	<u>8</u>	<u>=</u>	<u>=</u>	<u>0.60</u>	<u>0.40</u>	<u>=</u>
		Total	12	18	=	24	=	=	=	=	=
		ELECTIVE									
1	2PL009	Green Building Design	2	1.5	-	3	-	-	0.60	0.40	-
2	2PL010	Heritage Conservation	2	1.5	-	3			0.60	0.40	-
3	2PL011	Environmental Law	2	1.5	-	3			0.60	0.40	-
4	2PL012	Development Finance	2	1.5	-	3			0.60	0.40	-

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
2	-	-	2

Course Code	2PL611
Course Title	REGIONAL PLANNING

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

1. Enable basic understanding of preparation of regional plan Enable to estimate future travel demand for long terms transport projects.
2. Empower students basic Concepts of regional level analysis and their interpretations.
3. Apply the concepts in planning processes

Syllabus:
hours: 52.5

Teaching

Unit 1 – Introduction to Region

- Concept of regional planning: nature
- Aim & objectives, levels; Concept of a region, types, and regionalization.

Unit 2 – Interactions within a Region

- Regional interaction: Rank Size Rule, Settlement patterns,

115

- Guttman scale, centrality function method, Central place theory
- Regional networks and linkages, hierarchy of rural connectivity

Unit 3 – Regional Developments

- Regional development; Balanced and unbalanced development; Under-development
- Regional multiplier, input-output model
- Spatial equilibrium model: basic concept of spatial equilibrium model, spatial inequality, theory of spatial inequalities,
- Theories of regional inequalities, theories of urban equalities; Core-periphery model; Growth poles theory.

Unit 4 – Planning Processes

- Regional planning processes: Identification of plan objectives; collection, classification and analysis of data;
- Norms and standards for regional planning;
- Formulation of alternative plan proposals with respect to population distribution, location of new regional economic activities, infrastructure, plan implementation.

Unit 5 – Case Studies

- Selected case studies in regional development, National Capital Region, Mumbai Metropolitan Region, Bangalore regional plan, Hyderabad metropolitan plan, PMR Region.

Essential Readings:

- Hall, Peter and Tewdwr Jones, “Urban and Regional Planning”
- ITPI, “City and metropolitan planning and design”
- Bawa, V. K., Indian Metropolis: urbanization, planning and management.
- NCRPB, Regional plan, 2001, 2021
- Ramchandran R, “Urbanization and urban Systems in India”

Suggested Readings:

- “Five year plans” Planning Commission, India
- “Village Planning and rural Development”, ITPI Delhi
- Chaudhuri, Ray Jayasri, “An introduction to development and regional Planning with special reference to India”, Orient Longman Ltd, Kolkata
- “Manual for integrated district Planning”, Planning Commission, India
- Urban and Regional Planning and development in India, TCPO, India
- Carter, Harold, “The study of urban Geography”, Edward Arnold

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
2	-	1.5	3

Course Code	2PL612
Course Title	DISASTER MANAGEMENT AND CLIMATE CHANGE

Course Learning Outcomes (CLO):

At the end of the course students will be able to -

7. develop understanding about Disasters, stages of Disaster Management.
8. know about climate change and adaptation for climate change.
9. learn from various case studies the role of Urban and Regional Planning for Disaster Management and Climate Change Adaptation.
10. **apply the knowledge and policies in planning decisions**

Syllabus:
hours: 52.5

Teaching

Unit 1 – Introduction to Disaster Management and Climate Change

- Introduction to issues related to Disasters and Climate Change
- Defining disaster, phases of emergency management
- History of disasters, Role of State in Disaster Management
- Present structure of Disaster Management system; Funding system for recovery and mitigation

Unit 2 – Vulnerability, Risk, Resilience, Adaptation

- Vulnerability and social roots of disaster Community Risk and Resilience
- Defining risk and analyzing risk
- Resilience and Adaptation to Disasters and Climate Change

Unit 3 – Mitigation

- Mitigation, Role and Responsibilities of Stakeholders, Mitigation planning
- International development and disaster risk reduction
- International Development and Climate change adaptation

Unit 4 – Case Studies

- Recovery from Bhuj Earthquake, 2001
- Recovery from Japan Tsunami, 2011
- Mumbai Floods, 2016

Suggested Readings:

- Bolstad, Erika. 2016. Coastal Cities Look to Resilience Chiefs to Combat Climate Change. *Scientific American*, May 23, 2016.
<http://www.scientificamerican.com/article/coastal-cities-look-to-resilience-chiefs-to-combat-climate-change/>
- Boyd, Eugene. 2011. *Community Development Block Grant Funds in Disaster Relief and Recovery*. Congressional Research Service Report for Congress, Washington, D.C. Order Code RL33330, September 21, 2011.
<http://www.fas.org/sgp/crs/misc/RL33330.pdf>
- City of New Orleans. 2015. *Resilient New Orleans*. Read Executive Summary, pp. 4-5, and skim the rest. http://resilientnola.org/wp-content/uploads/2015/08/Resilient_New_Orleans_Strategy.pdf
- Iuchi, Kanako; Elizabeth Maly; and Laurie Johnson. 2015. Three Years After a Mega-Disaster: Recovery Policies, Programs and Implementation After the Great East Japan Earthquake. Pages 29-46 in *Post-Tsunami Hazard*, V. Santiago-Fandiño et al (eds.), Springer International.
- Jha, Abhas K, Jennifer Dwyne Barenstein, Priscilla M. Phelps, Daniel Pittet, and Stephen Sena. 2010. *Safer Homes, Stronger Communities: A Handbook*

for Reconstructing after Natural Disasters, World Bank, International Bank for Reconstruction and Development, Washington D.C. (Introductory notes and guiding principles).

- Full report is at <https://www.gfdrr.org/sites/gfdrr.org/files/SaferHomesStrongerCommunitites.pdf>
- Mochizuki, Junko. 2014. Decision-Making, Policy Choices and Community Rebuilding after the Tohoku Disaster. *Journal of Integrated Disaster Risk Management* 4(2): 103-118. <http://idrimjournal.com/index.php/idrim/article/view/85/Pages%20103-118>
- Rockefeller Foundation, Resilient City Materials. ^[1]Rockefeller Foundation. 2015. *City Resilience Framework*.
- http://www.100resilientcities.org/page/-/100rc/Blue%20City%20Resilience%20Framework%20Full%20Context%20v1_5.pdf Chicago's Resilience Challenge. [http://www.100resilientcities.org/cities/entry/chicago#/-_/100 Resilient Cities: About Us](http://www.100resilientcities.org/cities/entry/chicago#/-_/100ResilientCities:AboutUs). <http://www.100resilientcities.org/about-us#/-/>
- Thiruppugazh, V. and Sudhir Kumar. 2010. Lessons from the Gujarat Experience: Disaster Mitigation and Management, pages 223-237 in Shirish Patel and Aromar Revi, eds., *Recovering from Earthquakes: Response, Reconstruction, and Impact Mitigation in India*, Routledge.
- Wiley, Kip. 2000. *A History of the California Seismic Safety Commission*, SSC 2000-04, December 2000. Look at pages 9-45. http://www.seismic.ca.gov/pub/CSSC_HISTORY.pdf

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
2	-	-	2

Course Code	2PL613
Course Title	NATURAL RESOURCES MANAGEMENT

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

1. Learn about different types of natural resources and understand the biological, social and economic value of natural resources
2. Understand various conflicts in their uses by the humankind and value the significance of NR sustainability
3. Critically appraise development interventions for natural resources in the life and livelihoods of humans
4. Apply NRM knowledge in planning initiatives

Syllabus:
hours: 30

Teaching

Unit 1 Introduction to natural resources

- Definition, scope, and significance
- Land as resource: forests, minerals, agriculture and food security, soil, use for development intervention
- Water resources: surface and ground water, floods,

121

drought, coasts, river bodies, lakes and water tanks

- Air and mineral resources: fossil fuels, link with GHGs, pollution and Climate change

Unit 2 Conflicts over natural resources

- Link with the livelihoods, and sustainability indicators
- Resource allocation, control, use and ownership
- Natural resources and ownership regimes: Public, Private and Collective goods
- Degradation of natural resources, causes and externalities
- Water rights and conflicts (inter-state, inter-sector)

Unit 3 Management of Natural Resources

- Assigning values to natural resources
- Common Property Resources (CPR)
- Concept of ecosystem services
- Decision support tools like: Cost-Benefit analysis, SWOT Analysis

Unit 4 Case of Policies addressing NRM

- Environmental Protection Act, 1987
- Forest Conservation (Tribal rights) Act, 2014
- Water conservation and management related policies and programmes (IWRM), River-basin management, drought management, dam management
- Integrated Coastal Zone Management (ICZM)

Suggested Readings:

- Al Gore, 2006, *An Inconvenient Truth* – Documentary Film.
- Bharucha, Erach, 2011, *Environmental Studies for Undergraduate Courses*, UGC
- Carson, Rachel, 1961, *Silent Spring*.
- Cech, T. 2002, *Principles of water resources: History, development*

122

- management and policy*. Wiley, UK, (ISBN 0471438618), pp 445.
- de Villiers, M., 1999, *Water, the fate of our most precious resource*, Houghton Mifflin Co., (ISBN 0618030093), pp 352.
 - Gadgil, M. and Guha, Ramachandra, 1992, *This Fissured Land: An Ecological History of India*, University of California Press.
 - Hardin, Garrett, 1968, *The Tragedy of the Commons*, Science mag
 - Hillel, D., 1992, *Out of the Earth: Civilization and the life of the soil*, Aurum/Free Press, (ISBN 0520080807), pp 321.
 - Leach, M. and Mearns, R. 1996, *The lie of the land*, James Currey Ltd, Oxford, (ISBN 0852554095), pp 256.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
2	-	1.5	3

Course Code	2PL614
Course Title	PROJECT FORMULATION, APPRAISAL AND MANAGEMENT

Course Learning Outcomes (CLO):

At the end of the course the student would be able to –

1. Define the project and explain the nature and classification of project.
2. Understand the concepts of idea generation, project life cycle and project management.
3. Appreciate organizational and human resource management challenges while implementing sustainable development programmes and projects.
4. Apply the same in Detailed Project Report preparation

Syllabus:
hours: 52.5

Teaching

Unit 1 Introduction to Project Formulation, Appraisal and Management

- The concept of projects, Importance of project formulation, appraisal and management;

124

- Reasons for shortfall in its performance; scientific management, life cycle of project;
- Detailed project report, and feasibility studies;

Unit 2 **Project Formulation**

- Definition, objectives; Stages of project formulation and their significance;
- Methodology for project identification and formulation; Feasibility studies
- Financial cost-benefit analysis, social-cost benefit analysis; Project appraisal and report.

Unit 3 **Project Appraisals**

- Definition, objectives; Need for project appraisal;
- Stages of project form Network analysis; CPM, PERT, resource levelling and allocation
- Time-cost trade off aspects; Bar charts, Milestones, Standard oriented cost control
- Techniques of financial appraisal, payback period, IRR, DCF, NPV, CBR.
- Techno-economic analysis of projects.

Unit 4 **Project Implementation and Monitoring**

- Project implementation: stages of implementation, Teamwork, actors in project implementation;
- Project monitoring: meaning, objectives and significance;
- Monitoring techniques: integrated reporting, Milestones, time and cost overrun and under runs
- Unit index techniques

Unit 5 **Project Evaluations**

- Objectives, scope, stages, approach and steps, Life of a project;
- Techniques of project evaluation: input analysis, financial cost-benefit analysis, social-cost benefit analysis;

- Case studies in urban and regional development projects.

Suggested Readings:

- A Guide to the Project Management Body of Knowledge (2008), PMI
- Chandra P., (2013), Projects Planning, Analysis, selection, Implementation and Review, Tata McGraw Hill Publishing Company Pvt. Ltd.
- David Potts (2005) Project Planning and Analysis for Development, Viva Books Private Limited Mantel J, et. al. (2011) Project Management, Wiley India
- Desai V., (2013), Project Management, Himalaya Publications
- Gray, Larson (2008) Project Management: The Managerial Process, TMH
- Guide to Practical Project Appraisal (1978), United Nations, Reprinted by Oxford & IBH
- Gupta A., (2017), Project Appraisal and Financing, PHI Publications.
- Khatua Sitangshu (2011) Project Management and Appraisal, OUP
- Nicholas (2011) Project Management for Business and Technology, PHI
- Pinto Jeffrey (2012) Project Management: Achieving Competitive Advantage, Pearson
- Raghuram G., et. Al, (1999), Infrastructure Development and Financing, Macmillan India, Delhi
- Saini, Nayan S. & others Eds. (2012) Appraisal of urban development projects : concepts, techniques and practice.
- Sitangshu K., (2011), Project Management and Appraisal, Oxford University Press
- Weist, J.D and F.K. Levy, (1974) A Management Guide to PERT/CPM, Prentice-Hall of India, New Delhi

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
-	-	12	8

Course Code	2PL617
Course Title	REGIONAL PLANNING STUDIO

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

1. know basic concepts of the Regional planning process.
2. Contribute in preparation of Regional plan, Metropolitan plan, and block level

Syllabus:
hours: 180

Teaching

Unit 1 – Context of Regional Plans

- Role and relevance of regional planning at district or block level for regional planning.
- Critical appraisal of district or block level plans.
- Understanding the contents of various types of regional plans and their linkages with higher and lower order plans.

Unit 2 – Constitutional Provisions

- District planning in the context of 73rd and 74th Constitution Amendment Acts;

127

District Planning Committees (DPCs)

- Metropolitan Planning Committees (MPCs) and Ward Committees

Unit 3 – Organization of Field Surveys

- Formulation of goals, objectives, methodologies.
- Identification of data and sources of information; Collection of secondary and primary data for sectoral and spatial planning; detailed data analysis,

Unit 4 – Analysis and Synthesis

- Identification of development issues, potential thrust areas and constraints: sectoral and spatial
- Designing of alternative planning strategies, settlement patterns and development strategies.
- Sectoral and spatial prioritization, phasing, financial plans, institutional mechanisms, legislative framework, management plans

Unit 5 – Plan, Policies and Proposals

- Preparation of Regional Plan Document along with maps, plan; Preparation of policies and proposals with different scenarios and identification of priority areas; phasing and monitoring; governance structures for implementation; regional land utilization plan and the plan document
-

Essential Readings:

- City and Metropolitan planning and design, ITPI, New Delhi
- Bawa, V. K. “Indian Metropolis: urbanization, Planning and Management, Oxford University Press, Delhi

Suggested Readings:

- 73rd and 74th amendment act, India
- Manual for integrated district Planning, Planning Commission, India
- Regional plan, 2001, 2021, NCPBR, Delhi
- Mumbai metropolitan plan, Hyderabad Metropolitan Plan, Bangalore Metropolitan plan
- Madras 2011: A new Perspective for Metropolitan Management, MMRDA, Chennai

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
2	-	1.5	3

Course Code	2PL009
Course Title	GREEN BUILDING DESIGN

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

1. Understand concepts related to sustainability issues through building sector
2. Know the concept of green building and current trends
3. Incorporate the application of green building concept as a practice in planning scale decisions

Syllabus:
hours: 52.5

Teaching

Unit 1 Introduction to green building

- Global environmental change and its impacts
- Contribution of the building and urban development sector in Global environmental change
- Environmental sustainability in the built form

Unit 2 Introduction to building science

- Building Science Fundamentals: to include but not limited to: thermodynamics as related to wind, air, moisture, pressure, and heat
- Connect with environmental design and regional context (Traditional and Contemporary)
- Concept of embodied and operational energy

Unit 3 Frameworks for building sustainability assessment and accreditation

- National and International accreditation bodies
- LEED, BREEAM and GRUHA rating systems
- Advantages and disadvantages of each

Unit 4 Green Construction Methods

- Nature of building materials and aspect of sustainability (Introduction to Life cycle costs and life cycle energy analysis)
- Sustainable building envelope solutions
- ECBC codes

Unit 5 Building energy and resource simulation

- Components of building
- Site planning
- Resource and material planning
- Software used

Suggested Readings:

- Ahluwalia, V K (2015) “*Environmental Science*” New Delhi: The Energy and Resources Institute.
- Bansal, N. K & Mathur, Jyotirmay “*Energy Efficient Windows*” Anamaya Publishers
- Bureau of Energy Efficiency (2007) “*Energy Conservation in Building Code*” Ministry of Non-renewable Energy, Government of India
- Chawla, Shashi (2013) “*Textbook of Environmental Studies*” New Delhi: Tata McGraw Hill Education Private Limited
- Dekay, Mark (2014) “*Sun, Wind and Light: Architectural Design Strategies*” USA: John and Wiley Sons Inc.
- Evans, Martin (1980) “*Housing Climate and Comfort*” London: Architectural Press
- Galloe, Salam and Sayigh A.M.M. (1998) “*Architecture, Comfort and Energy*” Oxford, U.K: Elsevier Science Ltd.
- Givoni, B (1981) “*Man, Climate and Architecture: Architectural Sciences Series –Applied*” London: Science Publishers Ltd.
- Givoni, B (1994) “*Passive and Low Energy Cooling of Building*” New York: Van Nostrand Reinhold
- Hopfe, Christina J & McLeod (2015) Robert S. “*Passivhaus Designer's Manual: A Technical Guide to Low and Zero Energy Buildings*” Routledge Taylor & Francis Ltd.
- Koenigsberger, Otto, Ingersoll, T. G., Mayhew, Alan & Szokolay, S. V. (2013) “*Manual of Tropical Housing & Building*” Hyderabad: Universities Press Private Limited
- Krishan, Arvind, Baker, Nick, Yannas, Simos & Szokolay, S.V. (2012) “*Climate Responsive Architecture: A Design Handbook for Energy Efficient Buildings*” Tata McGraw-Hill Education (Asia) Co
- Kukreja, C P (1978) “*Tropical Architecture*” Tata McGraw-Hill Publishing Company
- Laureano, Pietro (2013) “*Water conservation techniques in traditional human settlements*” Ghaziabad: Copal
- Majumdar, Mili (2001) “*Energy Efficient Building in India*” New Delhi: The Energy and Resources Institute.
- McMullan, Randall (2012) “*Environmental Science in Building*” Palgrave.
- Nayak, J K, Hazra, R, Prajapati, J. (1999) “*Manual On Solar Passive Architecture*” New Delhi: Solar Energy Centre, MNES, Gov. Of India
- Olgyay, Victor (1963) “*Design With Climate – Bio-Climatic Approach to Architectural Regionalism*” New Jersey: Princeton University Press
- Oliver, Paul (2006) “*Built to meet needs: cultural issues in vernacular architecture*” Burlington, Elsevier
- Rajagopalan, R. (2011) “*Environmental Studies: From Crisis to Cure*”

New Delhi: Oxford University Press

- Shah, M G, Padki. S Y & Kale, C M (2002) “*Building Drawing: with an Integrated Approach to Built Environment*” New Delhi: Tata McGraw-Hill Education
- Tipnis, Aishwarya (2012) “*Vernacular Traditions- Contemporary Architecture*” New Delhi: The Energy and Resources Institute.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
2	-	1.5	3

Course Code	2PL010
Course Title	HERITAGE CONSERVATION

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

1. Achieve sensitivity towards heritage (amalgamation of the three –built and cultural)
2. Understand importance of heritage conservation and its inclusion in urban planning, development and tourism policy
3. Apply critical appraisal of the heritage status of buildings and contribute to their conservation

Syllabus:

**Teaching
hours: 52.5**

Unit 1 Introduction to Architectural Conservation

- Concept of heritage, types of heritage
- Need for conservation

- Unit 2** **Conservation procedures and frameworks**
- Documentation: Inventory preparation, listing and grading of heritage buildings and complexes
 - Degrees of Intervention: Prevention, Preservation, Consolidation, Restoration
 - Rehabilitation, Reuse, Reproduction, Reconstruction etc.
- Unit 3** **Legislation, policy and regulations**
- Role of UNESCO and various Charters
 - Role of National Level Bodies: INTACH, ASI, State Govt. Dept. of Archaeology
 - Role of local bodies
 - Heritage regulations for revitalization/ adaptive reuse
- Unit 4** **Heritage conservation, community and financing**
- Living heritage, development and conservation issues
 - Heritage and tourism policy
 - Financing mechanism for heritage development eg. TDRs
- Unit 5** **Conservation of Historic cities, complexes and buildings**
- Case studies from the state, national and international contexts

Suggested Readings:

- All Conservation Charters by UNESCO
- CPWD, *Handbook on seismic retrofit of Buildings*, Chennai
- ICOMOS, *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*
- Jukka Jokilehto, *A History of Architectural Conservation*

- N. L. Batra, *Heritage Conservation: Preservation and Restoration of Monuments*, Aryan Books International, 1996
- Robert A. Young, *Historic Preservation Technology*; New York, John Wiley & Sons, 2008
- Robert E. Stipe, ed. *A Richer Heritage: Historic Preservation in the Twenty-First Century*, Chapel Hill: University of North Carolina Press, 2003.
- Sir John Marshall, *Conservation Manual*
- Tilley, Chris, 2006, *Handbook of Material Culture*

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
2	-	1.5	3

Course Code	2PL011
Course Title	ENVIRONMENTAL LAW

Course Learning Outcomes (CLO):

At the end of the course students will be able to -

11. Learn about relevance of Environmental Law to Planning Legislations
12. Know details of Environmental Protection Legislation
13. Apply from the case studies and court decisions in the field of Planning and Environmental Law

Syllabus:

Teaching

hours: 52.5

Unit 1 – Environmental and Planning Law

- Introduction to the course on environmental law
- Institutions and structures of the law and legal system as applied to natural resources for Planning such as land, water, etc
- Legal processes and the implementation of these processes
- Relevance to associated professions
- Difference between lawyers , environmental planners and experts.

137

- The relationship between environmental and planning law.

Unit 2 – Planning Legislation and Environmental Concerns

- Planning Legislation: Sections dealing with environmental concerns (GTPUD Act, 1976, Land Revenue Code, Land Acquisition Act)
- Planning Processes of Key environmental resources
- Acts and Rules: Municipal Solid Waste Management (and Handling) Rules, 2000, CRZ, Climate Change Agreement
- Other Relevant Acts related to Conservation, Health, Buildings, Climate Change
- Community Consultation Processes

Unit 3 – Environmental Protection Legislation

- The Environmental Protection Act
- Water (Prevention of Pollution) Act
- Air (Prevention of Pollution) Act

Unit 4 – Case Studies and Court Decisions

- Bhopal: Environmental Protection
- Reading Environmental Court Decision

Suggested Books/Readings/Acts:

- England 2011, Ch 1; Stein (2008; pp31-84); Day 2008; Nichols 2008; Bruce 1999
- England (2011; Chs 2, 3); Batch and Shaw (2010; pp3)
- Acts and Rules:
 - EP Act 1986
 - Air (Prevention and Control of pollution) Act
 - Water (Prevention and Control of pollution) Act
 - Mines and Mineral Act

- Factories Act
- Pesticides Act
- Indian Forest Act
- Wildlife Act
- Ancient Monuments and Archaeological Sites and Remains Act
- Hazardous Waste Management and Handling Rules / Biomedical Rules / Solid Waste Management Rules
- Environment Tribunal Act
- Climate change Protocols and Conventions
- MOEF Guidelines and Notifications
- Appellate Authority Act
- Other related Notifications

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VI

L	T	P	C
2	-	1.5	3

Course Code	2PL012
Course Title	DEVELOPMENT FINANCE

Course Learning Outcomes (CLO):

At the end of the course the students will be able to -

- Acquire an introduction to Finance for Urban Development
- Be able to learn about issues in Development Finance
- Demonstrate Financial Analysis
- Students will know financial instruments and methods and possible ways to finance urban projects through case studies

Syllabus:
hours: 52.5

Teaching

Unit 1: Introduction to Finance for Urban Development

- Contemporary issues in Development Finance
- Main financial arrangements in local governance institutions
- Institutional analysis of local governments finance

140

- Use of local government finance information for policy making and planning at the local level in urban areas.

Unit 2: Financial Instruments and Methods

- Various types and Principles of Financial & Credit Systems, Instruments and Methods : land value capture, Capital Markets, Bonds, PPP, remittances, Loans, Grants, Micro credit
- Factors influencing the choice of financing instruments and methods including motivations of the parties involved
- Risk evaluation and allocation for Financial Instruments and Methods
- Issues of Capital structuring

Unit 3: Financial analysis

- Importance and know how about Financial analysis for urban development
- Cost Benefit analysis including social cost benefit analysis, calculation of IRR
- Discounted cash flow analysis

Unit 4: Cases Studies

- Case Studies of Development Projects Financed by Public and Private Bodies in sectors such as land development, transportation, solid waste management, power supply.

Suggested Readings:

- Demircuc-Kunt, A and Levine, R (2001), - Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development, MIT Press, Cambridge MA.
- Mishkin, F.S and Eakins, S.G (2006), 'Financial Markets and Institutions, Addison Wesley, New York.
- Miskin, F.S (2001), - The Economics of Money, Banking and Financial Markets', Addison Wesley, New York

- Harwood, A., Pomerleano, M and Litan R.E (1999) (ed), 'Financial Markets and Development: Crisis in Emerging Markets', the Brookings Institution, Washington, D.C
- David Hulme and Thankom Arun (2009), Microfinance - A Reader, Routledge.
- Beatriz Armendariz and Jonathan Morduch (2010), The Economics of Microfinance (second edition), MIT Press
- Ditcher Thomas and Malcolm Harper (2007) What's wrong with Microfinance? Practical Action Publishing

TEACHING AND EXAMINATION SCHEME
B.ARCH.
SEMESTER VII

<u>Sr. No.</u>	<u>Course Code</u>	<u>Course Title</u>	<u>Teaching Scheme</u>				<u>Examination Scheme</u>				
			<u>L</u>	<u>LPW/PW</u>	<u>T</u>	<u>C</u>	<u>Duration</u>		<u>Component Weightage</u>		
							<u>SEE</u>	<u>LPW/PW</u>	<u>CE</u>	<u>LPW/PW</u>	<u>SEE</u>
<u>1</u>	<u>2PL711</u>	<u>Valuation and Arbitration</u>	<u>1</u>	<u>1.5</u>	<u>=</u>	<u>2</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>2</u>	<u>2PL712</u>	<u>Research Methodology And Thesis Proposal Formulation</u>	<u>2</u>	<u>3</u>	<u>=</u>	<u>4</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>3</u>	<u>2PL713</u>	<u>Smart City Planning</u>	<u>2</u>	<u>1.5</u>	<u>=</u>	<u>3</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>4</u>	<u>2PL714</u>	<u>Urban Governance And Management</u>	<u>1</u>	<u>1.5</u>	<u>=</u>	<u>2</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>5</u>	<u>2PL715</u>	<u>Elective 6*</u>	<u>2</u>	<u>1.5</u>	<u>=</u>	<u>3</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>6</u>	<u>2PL716</u>	<u>Elective 7*</u>	<u>1</u>	<u>1.5</u>	<u>=</u>	<u>2</u>	<u>3</u>	<u>-</u>	<u>0.40</u>	<u>0.20</u>	<u>0.40</u>
<u>7</u>	<u>2PL717</u>	<u>Project Studio</u>	<u>=</u>	<u>12</u>	<u>=</u>	<u>8</u>	<u>-</u>	<u>-</u>	<u>0.60</u>	<u>0.40</u>	<u>-</u>
<u>8</u>	<u>2PL718</u>	<u>Training/ Summer Internship</u>	<u>8 - 10 weeks during the Summer Vacation</u>			<u>3</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>
<u>8</u>	<u>2PL720</u>	<u>Related Study Programme (RSP-2) #</u>	<u>Minimum 14 days x 8 hrs/day = 112 hrs.</u>			<u>3</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>
<u>-</u>	<u>-</u>	<u>Total</u>	<u>8</u>	<u>21</u>	<u>=</u>	<u>28</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
1	-	1.5	2

Course Code	2PL711
Course Title	VALUATION AND ARBITRATION

Course Learning Outcomes (CLO):

At the end of the course students will be able to:

14. To familiarize students with the aspects of valuation and arbitration.

15. To develop understanding of practical examples of the cases of valuation and arbitrations.

Syllabus:
hours: 37.5

Teaching

Unit 1: Valuation

- Techniques of valuation, elements of valuation and factors affecting valuation, Standard Rent.
- Methods of Valuation, Outgoings, Depreciation, Valuation of licensed premises, valuation of life interests, Valuation for Rating, Valuation of land and building property, finance for investment in real properties. Valuation tables.
- Rate of interest for sale, purchase, mortgage, capital gains, taxes, estate duties,

144

death duty.

- Valuation for compensation on acquisition, compensation under central and state legislation, relevance of town planning act.
- Types of Valuation: Valuation for renewal of lease/ extension of lease, standard rent, easement rights, insurance, estate development and advice of investment policy
- Preparation of feasibility report, valuation report, awards etc.
- Valuation process in Local Authority, Development Authority, TCPO etc., Financing Agencies/Bodies: World Bank, ADB, Public and Private Sector Banks, LIC, HUDCO.

Unit 2: Arbitration

- Introductory terms: Arbitration, arbitrators, umpire, nature of arbitration. Appointment conduct, powers and duties of arbitrators and umpire
- Procedure of arbitration, preparation and publication of awards. Impeachment.
- Claims: Fire insurance and arbitration of insurable value. Claims and damages.
- Injunctions: Easement and its definition. Features of easements, interim, permanent and mandatory injunctions.

Unit 3: Arbitration and Valuation in Planning Profession

- Role of Planner in Valuation domain. General principles and methods of valuation of land, buildings.
- Arbitration: Role of Planners in Arbitration process. Introduction to agencies related to Planning Profession.

Essential Reading:

- Rangwala (2015), Valuation of Real Properties, Charotar Publishing House Pvt.Ltd., Anand
- Chakraborti M. (2017), Estimating, Costing, Specification & Valuation in Civil

Engineering, M Chakraborti , Kolkata

- Dutta B N (2017), Estimating and Costing in Civil Engineering, UBS Publishers' and Distributors Pvt. Ltd., New Delhi
- The Arbitration & Conciliation Act, 1996 (2006), Eastern Book Company, Lucknow
- Tripathi, S.C. (2006), Arbitration and Conciliation, Allahabad Central Law Publications, Allahabad

Suggested Readings:

- Rangwala (2012), Estimating, Costing and Valuation, Charotar Publishing House Pvt. Ltd., Anand
- Bansal, A.K. (2006), Arbitration Agreements and Awards: Law of International Commercial Arbitration, Delhi
- Arbitration & Conciliation Act, 1996 (2006), Eastern Book Company, Lucknow
- Ahuja Satish (2009), Arbitration and Conciliation Digest, Vol. 1, Delhi Hindustan Publications, Delhi

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
2	-	3	4

Course Code	2PL712
Course Title	RESEARCH METHODOLOGY AND THESIS PROPOSAL FORMULATION

Course Learning Outcomes (CLO):

At the end of the course -

4. Students will learn the importance of research and relate to the field of planning
5. They will carry out secondary literature review on areas of focus that will become their thesis topics
6. Students will formulate their dissertation proposal and be ready to work on their theses at the earliest in the next semester.

Syllabus:
hours: 75.5

Teaching

Unit 1: Introduction to research

- Significance of research
- Types and purpose of research
- Planning and research
- Stages of research

Unit 2: Selection of topic and Literature Review

- Literature: Sources of information
- Pertinent definitions
- Working out objectives and rationale
- Annotated Bibliography

Unit 3: Thesis statement, developing the thesis

- Research Design
- Methodology, Scope and Limitation
- Citation and Referencing Styles
- Work on the proposal

Unit 4: Final proposal formulation

Suggested Readings:

- Agarwal, S.K; and Garg, R.K (eds.), (1988), “*Environmental Issues and Researches in India*”, Himanshu Publications, Udaipur
- Alexander, Christopher (1977) “*Pattern Language: Towns, Buildings, Construction*” reprinted 2015, Oxford
- Alexander, Christopher, Neis, Hajo, Anninou, Artemis & King, Ingrid (1979) “*A New Theory of Urban Design*” reprinted 1999, Oxford
- Bracken Ian (2008) “*Urban Planning Methods: Research and Policy Analysis*” Routledge
- Kumar, Ranjit (2014) “*Research Methodology: A Step-by-Step Guide for Beginners*” Sage Publications Ltd.
- Lynch, Kevin (1981) “*A Theory of Good City Form*” MIT Press
- Nayak, Dhanwanti (2011) “*Karaoked: Plagiarism in the Classroom*”, Economic and Political Weekly, February
- OWL Purdue (n.d.) “*Research and Citation Resources // Purdue Writing Lab*” https://owl.purdue.edu/owl/research_and_citation/resources.html
- Webster, J and RT Watson (2002) “*Analyzing the past to prepare for the future: Writing a literature review*” MIS Quarterly
- Sivaramakrishnan, K C, Kundu, Amitabh & Singh, B N (2015) “*Handbook of Urbanization in India*” Oxford University Press

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
2	-	1.5	3

Course Code	2PL713
Course Title	SMART CITY PLANNING

Course Learning Outcomes (CLO):

At the end of the course students will be able to:

- **Recognize prevailing development issues** of present era and their relation with the development models and concepts.
- Understand the concepts, discourses and practices of “Smart Cities” across Globe.
- **Comprehend the road map for Planning Smart Cities and benchmarking their performance for Indian context**

Syllabus:

Teaching

hours: 52.5

Unit 1: Understanding Smart Cities

- Cities during the present progressive era: their problems, functions, initiatives and solutions
- **City branding initiatives:** Sustainable cities, eco-cities, green cities, digital cities, Intelligent cities, future cities, global cities and smart cities
- Evolution of Smart city concept, its causes and relevance

Unit 2: Different approaches and Components of Smart city models

- Different **models of smart cities** encompassing Smart people, Smart Mobility, Smart Economy, Smart Environment, Smart Living ,Smart Governance
- **Other smart features:** Smart energy, Smart buildings etc

149

- Approach of smart city model in India, its context, relevance and features emulated

Unit 3: Role of various stakeholders

- Government, Private agencies, Public and Public –Private Partnerships, Role of communication and technology

Unit 4: Global experience of Smart Cities

- Understanding the concepts, discourses and practices of “Smart Cities” across Globe: US, EU, UK, Middle East and South East-East Asia experiences
- Standard, performance, Benchmarks and Practice Codes

Unit 5: Quantifying Smartness

- Various toolkits, indexes and models to measure smartness
- Discussion on measuring smartness and the level of data required for the same in the context of urban India

Suggested readings

- Townsend, A. M. (2013). *Smart cities: Big data, civic hackers, and the quest for a new utopia*. WW Norton & Company.
- Deakin, M. (Ed.). (2013). *Smart cities: governing, modelling and analysing the transition*. Routledge.
- Dameri, R. P., & Rosenthal-Sabroux, C. (Eds.). (2014). *Smart city: How to create public and economic value with high technology in urban space*. Springer.
- Urry, J. (2016). *Mobilities: new perspectives on transport and society*. Routledge.
- Remagnino, P., Foresti, G. L., & Ellis, T. (Eds.). (2005). *Ambient intelligence: a novel paradigm* (p. 240). New York, NY, USA.: Springer.
- Tapscott, D. (1996). *The digital economy: Promise and peril in the age of networked intelligence* (Vol. 1). New York: McGraw-Hill.
- Marvin, S., Luque-Ayala, A., & McFarlane, C. (Eds.). (2015). *Smart urbanism: Utopian vision or false dawn?*. Routledge.
- Batty, M. (2013). *The new science of cities*. Mit Press.
- Mostafavi, M., & Doherty, G. (Eds.). (2016). *Ecological urbanism*. Lars Müller Publishers.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
1	-	1.5	2

Course Code	2PL714
Course Title	URBAN GOVERNANCE AND MANAGEMENT

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

- Understand linkage between Governance and Planning
- Recognize existing institutional framework and challenges
- Associate role of best practices in efficiency of Urban Management

Syllabus:

Teaching hours: 37.5

Unit 1 Government and Governance

- Understanding the concepts of Citizenship, Historical Evolution of these Concepts

Unit 2 Local Governance in India

- History and Evolution of Theories and Models of Administration
- Local Government, Urban Governance and Planning in India
- Union, State, District and Local Government relations; Decentralization of Local Government, Progress and Politics

Unit 3 Governance Urbanization and Globalization

- Processes of Urbanization
- Developmental Conflicts
- Resource Constraints
- Systems Deficiencies
- Governance Challenges of Big Cities, Small Towns and Urban Areas

Unit 4 Decentralization of Powers and Functions in Governance

- Post 73rd and 74th Amendment Scenario
- 74th Constitution Amendment Act, including - XII Schedule
- Decentralized and Integrated Planning Processes
- Planning, Governance and Spatial strategy
- Implementation, achievements and Best Practices

Unit 5 Participatory Governance

- Importance of participatory governance
- Measuring Good Governance through Stakeholder Analysis, Social Audit and other Indicators
- Role of Non State Actors like Private /Civil and Community in Governance, Urban Development and management

Unit 6 Management of Urban Development

- Functions, Powers, Organization Structure and Resources in Urban Governance
- Multiplicity of Organizations, Coordination Challenges and Planning Deficits

Unit 7 Initiatives in good governance and Government Reforms in Management

- JnNURM, Investment Prioritization and Participatory Development
- City Development Plan and Development Plan
- Convergence and Implementation Challenges
- Human Resource Challenges and Capacity Development for Good Urban Governance and Management
- ICT, Local Governance and Change Management

Reading References:

- Bhambhri, C.P. 2005. Globalization: India, Nation, State and Democracy, Shipra, Delhi.
- Bhattacharya, Mohit. 1976. Management of Urban Government in India, Uppal Book, New Delhi.
- Chand, Vikram K. 2010. Public Service Delivery in India, Oxford, Delhi.
- Freire, Mila and Richard Stren. 2001. The Challenges of Urban Government, The World Bank Institute, Washington.
- High Powered Committee for Estimating the Investment (HPCE) Requirements for Urban Infrastructure Projects. 2011. Report on Indian Urban Infrastructure and Services, Ministry of Urban Development, GoI.
- Jha, Ramanath and Nasrin Siddique. 2000. Towards a People Friendly Cities, Unicef, Mumbai.
- Maheshwari, S.R. 2013. Indian Administration, Orient Black Swan, Delhi.
- Mahala, O.M. 2011. Urban Governance in India, Authors press, Delhi.
- Mander Harsh and Mohammed Asif. 2004 Good Governance, Books of Change, Action Aid, Bangalore.
- Mathur, O.P. 2000. Decentralization in India: A Report Card, UMP-Asia Occasional Paper No 47. UNCHS, Bangkok.
- Mehta, Dinesh. 1998. Urban Governance: Lessons from Best Practices in Asia, UMP-Asia, Occasional Paper No.40, UNCHS, Bangkok.
- Ministry of Urban Development, GoI, JnNURM Experience Sharing Workshop, Lessons Learnt from Mission Cities, Workshop Proceedings, 14 and 15 March, 2013, NIUA, New Delhi.
- Pieterse Edgar.2000. Participatory Urban Governance, UNCHS, Nairobi.
- Rai Nitish and Awadhesh Kumar Singh. 2010. New Dimensions of Urban Management in India, serials Publications, New Delhi.
- Ramesh, G. et al. 2010. Urban Infrastructure and Governance, Routledge, Delhi.
- Ramachandran, Padma. 2000. Public Administration in India, NBT, Delhi.
- Shaw, Annapurna. 2012. Indian Cities, Oxford, Delhi.
- Swamy M C K, B Bhaskara Rao and V M Hegde. 2008, Urban Planning and Development at Crossroads, Books for Change, Bangalore.
- UNESCO and Centre de Sciences Humaines. 2011. Urban Policies and Right to the in India: Rights Responsibilities and Citizenship, New Delhi

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
-	-	12	8

Course Code	2PL717
Course Title	INDEPENDENT PROJECT STUDIO

Course Learning Outcomes (CLO):

At the end of the course students will be able to:

- To the understanding of formulation of project.
- To learn the outlining of the project stages (Identification, data collections, analyze, issues and recommendation & proposal).
- To inculcate students for developing professional minor Project.

Syllabus:
hours: 180

Teaching

Each student of Bachelor of Planning is required to prepare a project on the subject of his / her choice, concerning all planning area. The project shall be approved by the concerned studio faculties. This project will provide an opportunity to the student to develop independent project by using the skills of understand, analyze and propose learnt through various theory and practical courses. Project will be prepared by the student under the guidance of studio faculty. The students will be required to present

his/her project, graphically, oral presentation and through written report. The student will also be required to prepare model for project before the external jury.

If student want to work in group then group of 3-5(maximum) students are allowed to work on same project, with prior to permission of concern studio faculties. In this case, student can work together in group for case study analysis and data collection, but they must work on different aspect of project. This studio will give the flexibility to student, think out of the box in planning field.

Unit 1: Field Surveys

Depending on the Project, field surveys have to be designed and field work has to done after

conducting appropriate sample surveys.

Unit 2: Synthesis of Data and Information and Findings

Field data and information and literature search findings should be synthesized to make final arguments and identification of planning issues

Unit 3: Proposals and Recommendations

Final, specific planning proposals and recommendations should be made at various geographical levels. Proposals should directly emanate from analysis and should not be generalized.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
1	-	1.5	2

Course Code	2PL013
Course Title	MUNICIPAL FINANCE

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

- Understand the municipal finance framework.
- Define the various innovative methods in municipal resource generation.
- Assess and evaluate various municipal budgets.

Syllabus:
hours: 37.5

Teaching

Unit 1- Constitutional Provisions

- Constitutional provision for municipal finance: principle of fiscal federalism;
- Constitution,
- Powers and functions of Central Finance Commission (CFC) and State Finance Commission (SFC)

Unit 2 - Municipal Finance Framework and Conventional Resources

156

- Categorisation of municipal revenue: internal and external revenue,
- Capital and revenue receipt;
- Municipal finance framework;
- Unit area method in property tax calculation and rationalisation of user charges;
- Streamlining municipal tax administration

Unit 3 - Non Conventional Municipal Resources

- Innovations in municipal resource mobilisation:
- monetary exaction (betterment levy, impact fee, external development charges, vacant land development tax);
- Land exactions (TDR, Town Planning scheme, accommodation reservation, monetisation of underutilised municipal assets);
- External finance: debt financing, PPP, role of financial intermediaries, municipal bond

Unit 4 - Municipal Budget Administration

- Municipal budget: general budget, performance budget, gender budget;
- Fiscal Responsibility and Budget Management (FRBM) Act, 2003;
- Municipal accounting and auditing (overview only)

Unit 5 - Assessment of Municipal Fiscal Scenario

- Fiscal devolution vis a vis fiscal dependency of municipalities;
- Fiscal indicators – Revenue Dependency Ratio (RDR), Fiscal Autonomy Ratio (FAR), Expenditure Decentralisation Ratio (EDR)

Suggested Readings

- Anwar Shah (Ed). 2007. Local Budgeting. The World Bank. Washington D.C.
- Bird Richard M. (1994). “Financing Local Services: Patterns, Problems, and Possibilities”, Paper presented for Global Report on Human Settlements, April.
- Bird, Richard and Vaillancourt, Francois (1998). Fiscal Decentralization in Developing Countries, Cambridge: Cambridge University Press.
- Deborah L. Wetzel. 2013. Financing Metropolitan Governments in Developing Countries. Lincoln Institute of Land Policy, Cambridge
- George Peterson and Patricia Annez. Financing Cities. Sage Publications. New Delhi.

- Jorge Martinez-Vazquez, and Joan Youngman. 2008. Making the Property Tax Work: Experiences in Developing and Transitional Countries. Lincoln Institute of Land Policy. Cambridge.
- Mohanty P K. et al, Municipal Finance in India – An Assessment, Reserve Bank of India
- Mohanty P K., (2016), Financing Cities in India: Municipal Reforms, Fiscal Accountability and Urban Infrastructure. SAGE India.
- Municipal Finance – A Handbook for Local Government Practitioners, World Bank
- O.P. Mathur et al, Costs and Challenges of Local Urban Services: Evidence from Indian Cities, Oxford University Press
- Om Prakash Mathur. 2011. Municipal Finance Matters: India Municipal Finance Study. ADB Website.2012. Intergovernmental Transfers in Local Government Finance. A Report to the UN-HABITAT. Unpublished. NIUA. New Delhi.
- Ramesh G, Nagadevara V, Naik G, Suraj A B., (2010), Public Private Partnership, Taylor and Francis Books India Ltd
- Reddy V, Sridhar K. S., (2010), State of Urban Services in India's Cities – Spending and Financing, Oxford University Press.
- Roy W. Bahl and Johannes F Linn. 1992. Urban Public Finance in Developing Countries. A World Bank book. Oxford University Press. New York.
- Sudipto Mundle, Public Finance: Policy Issues for India, Oxford University Press

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
1	-	1.5	2

Course Code	2PL014
Course Title	INTRODUCTION TO MACROECONOMICS

Course Learning Outcomes (CLO):

At the end of the course -

1. Students will get introduced to the basic concepts of Macroeconomics
2. They will understand the path of Indian Economic Development and Planning, its history and current trends
3. Students will be cognizant as professionals of larger economics issues while working on various planning sectors.

Syllabus:
hours: 37.5

Teaching

Unit 1: Introduction to Macroeconomics and National Income Accounting

- Basic issues studied in macroeconomics
- Measurement of gross domestic product
- Income, expenditure and the circular flow
- Real versus nominal GDP; price indices

159

- National income accounting for an open economy; balance of payments: current and capital accounts.

Unit 2: Money and Inflation

- Functions of money, Quantity theory of money
- Role of Central Bank: Money supply and Demand; Credit creation
- Tools of monetary policy
- Inflation and its types; hyperinflation; Phillip's Curve

Unit 3: The Closed Economy in the Short Run

- Classical and Keynesian systems
- Simple Keynesian model of income determination
- IS-LM model
- Fiscal and monetary multipliers

Unit 4: International Macro-economics

- International flow of funds
- Exchange rate determination – Real and Nominal Exchange rates

Unit 5: Taxation: Canons of taxation

- Direct and Indirect Tax
- Types of Taxes in India

Unit 6: Planning in India

- Indian Economy and Development
- Growth and Equity debate

Suggested Readings:

- Acharya, Shankar (2005) “*Thirty Years of Tax Reform in India*” Economic and Political Weekly, May 14-20.
- Balakrishnan, Pulapre (2007) “*The Recovery of India: Economic Growth in the Nehru Era*”, Economic and Political Weekly, November.
- Basu, Kaushik (2009) “*China and India: Idiosyncratic Paths to High Growth*”, Economic and Political Weekly, September.
- Charles I. Jones (2002) “*Introduction to Economic Growth*” W.W. Norton & Company, 2nd edition.
- Dornbusch, Fischer and Startz (2010) “*Macroeconomics*” McGraw Hill, 11th edition.
- Dreze, Jean and Angus Deaton (2009) *Food and Nutrition in India: Facts and Interpretations*, Economic and Political Weekly, February.
- Dreze, Jean and Amartya Sen (2013) “*An Uncertain Glory: India and its Contradictions*”, Princeton University Press.
- Dyson, T (2008) “*India’s Demographic Transition and its Consequences for Development*” in Uma Kapila, editor, *Indian Economy Since Independence*, 19th edition, Academic Foundation.
- James, K. (2008) “*Glorifying Malthus: Current Debate on Demographic Dividend in India*” Economic and Political Weekly, June.
- J.B.G. Tilak (2007) “*Post Elementary Education, Poverty and Development in India*” International Journal of Educational Development.
- Kapila, Uma (Ed.) (2018) “*Indian Economy Since Independence, 28th Edition: A Comprehensive and Critical Analysis of India's Economy, 1947-2017*” Academic Foundation
- Khera, Reetika (2011) “*India’s Public Distribution System: Utilisation and Impact*” Journal of Development Studies.
- Kingdon, Geeta G. (2007) “*The Progress of School Education in India*”, Oxford Review of Economic Policy.
- Krishna, Aniruddha and Devendra Bajpai (2011) “*Lineal Spread and Radial Dissipation: Experiencing Growth in Rural India, 1992-2005*”, Economic and Political Weekly, September.
- Krugman, Paul; Maurice Obstfeld and Marc Melitz, (2012) “*International Economics*”, Pearson Education Asia, 9th edition.
- Mankiw, N. Gregory (2010) “*Macroeconomics*”, Worth Publishers, 7th edition.

- Mankiw, N G (2013) “*Economics: Principals and Applications*”, Cengage Learning
- Rama Baru et al (2010) “*Inequities in Access to Health Services in India: Caste, Class and Region*”, Economic and Political Weekly, September.
- Rao, M. Govinda (2011) “*Goods and Services Tax: A Gorilla, Chimpanzee or a Genius like Primates?*” Economic and Political Weekly, February 12-18
- Shetty, S.L. (2007) “*India’s Savings Performance since the Advent of Planning*”, in K.L. Krishna and A. Vaidyanathan, editors, *Institutions and Markets in India’s Development*.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

		L	T	P	C
		1		1.5	2
Course Code	2PL015				
Course Title	INDUSTRIAL AREA PLANNING AND MANAGEMENT				

Course Learning Outcomes (CLO):

At the end of the course students will be able to:

- Understand various typologies of Industrial Areas in terms of their structure, working and Impact on a region.
- Comprehend importance of Industrial areas and learn to integrate it in Master plans and other Development plans realizing its complexities and significance.

Syllabus:
hours: 37.5

Teaching

Unit-1: Introduction to Industrial Area Planning and Management

- Types of Industrial Areas: Industrial Area, Industrial Estate, Industrial Parks, Export Processing Zones, Special economic zones, Special Investment Region, Industrial Clusters, Growth corridors etc.
- Examples of above from India and abroad will be discussed and analyzed.

Unit-1: Categorization of Industries:

- Size: Cottage industry, Small scale Industry, Medium scale Industry, Large scale Industry

163

- Pollution: Green, Red, Orange, White
- Employment generation: capital intensive vs. labour intensive industries etc.
- The above will be discussed with relevant examples

Unit-2: Spatial Planning of Industrial Areas:

- Norms for Industrial Area required for: Location/ Siting, Industry type, Pollution, Plot size / Density, Provision of Amenities & Utilities

Unit-3: Regional Impact of Industrial Areas:

- Backward and Forward linkages, Livelihood, Social mobility (Vertical and Horizontal),
- Employment generation, GDP, Infrastructure growth
- Environment, Human health

Unit-4: Industrial Ecology:

- Material and energy flow, technological change and the environment
- life-cycle planning, design and assessment
- Concept of Eco Industrial parks, product-oriented environmental policy

Unit-5: Industrial Policies/Acts/ Norms/ Regulations/ Guidelines:

- At National Level environmental pollution standards and norms specified by CPCB for air/ water/ noise/ waste etc, Coastal Zone Regulations ,Zoning Atlas for Siting of Industries, SEZ Industrial Area Development Act etc
- At state level GID act, UPIAD act etc, Land Development mechanism & system, Formulation & functions of governing Authority, State PCB, Monitoring Pollution levels in Industrial Areas, Notified Area Development Plan & DCR

Recommended Readings:

- Isard, W., Schooler, E. W., & Vietorisz, T. (1959). *Industrial complex analysis*

and regional development: A case study of refinery-petrochemical-synthetic-fiber complexes and Puerto Rico (Vol. 3). Technology Press of the Massachusetts Institute of Technology.

- Cooke, P. N., & Lazzeretti, L. (Eds.). (2008). *Creative cities, cultural clusters and local economic development*. Edward Elgar Publishing.
- Porter, M. E. (2011). *Competitive advantage of nations: creating and sustaining superior performance* (Vol. 2). Simon and Schuster.
- Socolow, R., Andrews, C., Berkhout, F., & Thomas, V. (Eds.). (1997). *Industrial ecology and global change* (Vol. 5). Cambridge University Press.
- van den Bergh, J. C., & Janssen, M. (Eds.). (2004). *Economics of industrial ecology: Materials, structural change, and spatial scales*. MIT Press.
- Amin, A., & Thrift, N. (1995). *Globalization, institutions, and regional development in Europe*. Oxford university press.
- Scott, A. J. (1988). *New industrial spaces: Flexible production organization and regional development in North America and Western Europe* (Vol. 3). Pion Ltd.
- Loucks, D. P., Van Beek, E., Stedinger, J. R., Dijkman, J. P., & Villars, M. T. (2005). *Water resources systems planning and management: an introduction to methods, models and applications*. Paris: Unesco.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
1	-	1.5	2

Course Code	2PL016
Course Title	PUBLIC PRIVATE PARTICIPATION FOR DEVELOPMENT PROJECTS

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

- Understand the Concept, Benefits and Limitations of PPP
- Evaluate projects for financial and implementation success
- Propose PPP mechanism for Urban and Rural Areas

Syllabus:

Teaching hours: 37.5

Unit 1 Role and Trends in PPP

- Need for PPP, Concepts and Benefits
- Public-Private Partnerships in delivery of development Projects
- Recent trends of increasing private participation in all areas
- PPP stakeholders and their role

Unit 2 Types of Partnerships

- Types of partnerships possible e.g. contracting, BOT, Joint Venture, concessions, community led informal partnership approaches
- Strengths and weaknesses of PPPs and their funding structures

Unit 3 Partnerships and Alliances in Development Projects

- Preconditions for partnerships and collaborations
- Process of Identification & Allocation of Projects
- Methods of making groups and partnerships effective
- Methods of promoting participation
- Advantages of partnerships in improving services in urban and rural areas
- Inclusive Development through PPP

Unit 4 Mechanism of Financing and Implementation of PPPs

- Processes, procedures and mechanisms in partnerships
- Regulations and administrative procedures
- Competitive bidding, due diligence techniques, regulatory authority
- Transaction cost
- Use of municipal bonds for raising public investment
- Capacity building of municipalities for undertaking partnership efforts
- Cost recovery options for sustainability

Unit 5 PPP for Rural Infrastructure

- Financial requirements
- Major source of Funds
- Modes of raising finance and cost recovery

Unit 6 Different PPP Practices

- Most popular methods implemented
- International and Nationwide practices in PPP e.g. models by Singapore, West Bengal, Maharashtra, Rajasthan, Gujarat etc.

Suggested Readings:

- Affordable Housing and Public-Private Partnerships, Nestor M. Davidson, Ashgate Publications
- How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets, Edward Farquharson et al., World Bank, 2011
- Infrastructure Development: Public and Private Participation, Seminar, 1999, - Institute of Town Planners India
- National Public Private Partnership Policy, Department of Economic Affairs, Govt. Of India, 2011
- Policy, Management and Finance for PPP, Akintola Akintoye et al., John Wiley & Sons
- PPP for Urban Waste Utilities: A Review of Experiences in Developing Countries, Philippe Marin, World Bank
- PPP in Infrastructure, R N Joshi, Vision Booth
- Public Private Partnership for Rural Development: A Corporate Social Responsibility Perspective, Aarushi Jain, Kanishka Publishers, New Delhi
- Public Private Partnership in Infrastructure, Yogendra Sharma, Vitasta, New Delhi
- Public Private Partnership, G Ramesh et al, Routledge
- Public Private Partnerships Approach, Rakesh Ranjan, Adhyayan Publisher
- Public Private Sector Provision of Urban Services, National Institute of Urban Affairs (NIUA), New Delhi
- Public-Private Partnership Handbook, Asian Development Bank
- Public-Private Partnership Projects in Infrastructure, Jeffrey Delmon, Cambridge University
- Scope and Practice of Privatisation of Urban Services in India National Institute of Urban Affairs (NIUA), New Delhi
- Strategic Issues in Public-Private Partnerships, Anneloes Blanken, John Wiley & Sons
- Urban Level Policy and PPP for Real Estate & Infrastructure, A K Jain, Readworthy
- Urban Models and Public Private Partnerships, Remo Dalla Longa, Springer

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
1	-	1.5	2

Course Code	2PL017
Course Title	PLANNING FOR INFORMAL SECTOR

Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

5. Differentiate between different variants of urban informal activity and urban poverty.
6. List the crucial infrastructural and institutional support for urban informal sector.
7. Measure urban poverty index and map the hotspots of urban poverty

Syllabus:
hours: 37.5

Teaching

Unit 1 - Understanding Urban Informal Sector

- Basic concepts, definition of informal sector; Different variants of urban informal activity;
- Segmentation and heterogeneity, Identification of vulnerable segments – child labourers, differently abled, old aged etc.
- Role of Informal Sector in Cities, Spatial Focus on Informal Sector, socio-economic deprivation and informal sector; poverty and informality in historic areas;

169

- Policies and practices in dealing with the informal sector in India and abroad (e.g. National Policy on Urban Street Vendors, NCEUS, others), relationship between informal economy and housing, home-based economic activities

Unit 2 - Understanding Urban Poverty

- Appreciating urban poverty – absolute and relative poverty;
- Poverty measurement; Cumulative deprivation of urban poverty; Mapping of urban poor;
- Dimensions of urban poverty, magnitude of problem,
- Urban poverty alleviation programmes,
- Impact of macro-economic structural adjustment policies on poor urban households.

Unit 3 - Supportive Infrastructure for Urban Informal Settlement and Economy

- Securing occupational health and safety of informal sector employees;
- Social protection – social security and social insurance;
- Financial inclusion: promotion of micro credit and community thriftiness
- Alternative approaches for delivery of basic services to the urban poor
- Community planning approach, low cost alternatives and institutional reforms approach.

Unit 4: Land and Informality

- Spatial justice to urban informal economy – statutory allocation of urban land to urban informal activity;
- Identification of hot spots of urban poverty- ghettoization; The economics of location of informal settlements

Unit 5 - Planning for Informal sector

- Policy framework for addressing the challenges of informal economy,
- Planning provisions and norms, policy for household industry, street vending

etc. and its implications for norms and standards at city level.

Suggested Readings

- India Urban Poverty Report 2009 by India, Ministry of Housing and Urban Poverty Alleviation, Publisher: Oxford University Press 2009
- Inclusive urban planning state of the urban poor report 2013 by India, Ministry of housing and urban poverty alleviation, Publisher: New Delhi Oxford Uni. Press 2014
- India's reforms: how they produced inclusive growth, Book by Bhagwati, Jagdish Ed; Panagariya, Arvind Ed., Publisher: Madras, Singapore etc Oxford Uni. Press 2012
- Informal city: inclusive growth for poverty alleviation, Book by Jain, A. K., Publisher: New Delhi Readworthy Publication Pvt. Ltd. 2011
- Land policies for inclusive growth, Book by Haque, T. Ed., Publisher: New Delhi, Concept Pub. Co. 2012
- Basic services and the urban poor, Book by National Resource Centre on Urban Poverty, Publisher: Bombay, New Delhi etc All India Institute of Local Self Government 2007
- Affordable housing reader, Book by Tighe, Rosie J. Ed; Mueller, Elizabeth J. Ed., Publisher: London & New York Routledge 2013
- Building from the bottom : infrastructure and poverty alleviation, Book by Kochhar, Sameer Ed; Ramachandran, M. Ed., Publisher: New Delhi Academic Foundation
- 2010
- Are you being served? : new tools for measuring service delivery Book by Amin, Samia & others., Publisher: Washington D.C. World Bank 2008
- Developing sustainable and inclusive urban infrastructure services a guidebook for project implementers and policy makers in India by United States Agency for International Development (USAID), Publisher: Silver spring TCG International 2011
- Eleventh five year plan (2007-2012): inclusive growth. Vol.1, Book by Planning Commission; Government of India, Publisher: Madras, Singapore etc Oxford Uni. Press 2008
- In search of inclusive policy: addressing graded inequality, Book by Thorat, Sukhdeo Ed; Kumar, Narender Ed., Publisher: Jaipur, New Delhi etc Rawat Pubs. 2008

- Child-work, poverty and underdevelopment, Book by Rodgers, Gerry Ed; Standing, Guy Ed., Publisher: Geneva, New Delhi etc International Labour Organization. 1980
- Chronic poverty in India : an overview, Book by Mehta, AashaKapur; Shah, Amita, Publisher: New Delhi Indian Institute of Public Administration & Chronic Poverty Research Centre 2004
- Cities for children : children rights, poverty and urban management, Book by Bartlett, Sheridan & others, Publisher: London United Nations Children's Fund; New York & Earthscan Pub. Ltd. 1999
- Combining the quantitative and qualitative approaches to poverty measurement and analysis : the practice and the potential. Book by Carvalho, Soniya; White, Howard, Publisher: Washington D.C. World Bank 1997
- Empowerment and poverty reduction : a source book. Book by Narayan, Deepa Ed. Publisher: New Delhi World Bank ; Washington & Rawat publications 2005
- India: urban poverty report 2009 Book by India, Ministry of Housing & Urban Poverty Alleviation. Publisher: Madras, Singapore etc Oxford Uni. Press 2009
- Resource material on integrated slum development programme in urban centres.
- Book by Regional Centre for Urban and Environmental Studies (RCUES). Publisher: Bombay, New Delhi etc All India Institute of Local Self Government 2007
- Street vendors in the global urban economy Book by Bhowmik, Sharit K. Ed. Publisher: New Delhi Routledge 2010
- Vendors and informal sector : a case study of street vendors of Surat city Book by Ray, Chandranath N; Mishra, Aseem. Publisher: Ahmedabad Centre for Urban Equity, CEPT Uni. 2011

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
1	-	1.5	2

Course Code	2PL018
Course Title	GREEN BUILDING DESIGN

Course Learning Outcomes (CLO):

At the end of the course the student would be able to:

4. Understand building sustainability concepts
5. Understand the concept of green building, current trends

Realize the impact and applications of green building as a practice and not just a trend

Syllabus:
hours: 37.5

Teaching

Unit 1 Introduction to green building

- Global environmental change and its impacts
- Contribution of the building and urban development sector in Global environmental change
- Environmental sustainability in the built form

Unit 2 Introduction to building science

- Building Science Fundamentals: to include but not limited to: thermodynamics as related to wind, air, moisture, pressure, and heat
- Connect with environmental design and regional context (Traditional and Contemporary)
- Concept of embodied and operational energy

Unit 3 Frameworks for building sustainability assessment and accreditation

- National and International accreditation bodies
- LEED, BREEAM and GRUHA rating systems
- Advantages and disadvantages of each

Unit 4 Green Construction Methods

- Nature of building materials and aspect of sustainability (Introduction to Life cycle costs and life cycle energy analysis)
- Sustainable building envelope solutions
- ECBC codes

Unit 5 Building energy and resource simulation

- Components of building
- Site planning
- Resource and material planning
- Software used

Suggested Readings:

- Ahluwalia, V K (2015) “*Environmental Science*” New Delhi: The Energy and Resources Institute.
- Bansal, N. K & Mathur, Jyotirmay “*Energy Efficient Windows*” Anamaya Publishers
- Bureau of Energy Efficiency (2007) “*Energy Conservation in Building Code*” Ministry of Non-renewable Energy, Government of India
- Chawla, Shashi (2013) “*Textbook of Environmental Studies*” New Delhi: Tata McGraw Hill Education Private Limited
- Dekay, Mark (2014) “*Sun, Wind and Light: Architectural Design Strategies*” USA: John and Wiley Sons Inc.
- Evans, Martin (1980) “*Housing Climate and Comfort*” London: Architectural Press
- Galloe, Salam and Sayigh A.M.M. (1998) “*Architecture, Comfort and Energy*” Oxford, U.K: Elsevier Science Ltd.
- Givoni, B (1981) “*Man, Climate and Architecture: Architectural Sciences Series –Applied*” London: Science Publishers Ltd.
- Givoni, B (1994) “*Passive and Low Energy Cooling of Building*” New York: Van Nostrand Reinhold
- Hopfe, Christina J & McLeod (2015) Robert S. “*Passivhaus Designer's Manual: A Technical Guide to Low and Zero Energy Buildings*” Routledge Taylor & Francis Ltd.
- Koenigsberger, Otto, Ingersoll, T. G., Mayhew, Alan & Szokolay, S. V. (2013) “*Manual of Tropical Housing & Building*” Hyderabad: Universities Press Private Limited
- Krishan, Arvind, Baker, Nick, Yannas, Simos & Szokolay, S.V. (2012) “*Climate Responsive Architecture: A Design Handbook for Energy Efficient Buildings*” Tata McGraw-Hill Education (Asia) Co
- Kukreja, C P (1978) “*Tropical Architecture*” Tata McGraw-Hill Publishing Company
- Laureano, Pietro (2013) “*Water conservation techniques in traditional human settlements*” Ghaziabad: Copal
- Majumdar, Mili (2001) “*Energy Efficient Building in India*” New Delhi: The Energy and Resources Institute.
- McMullan, Randall (2012) “*Environmental Science in Building*” Palgrave.
- Nayak, J K, Hazra, R, Prajapati, J. (1999) “*Manual On Solar Passive Architecture*” New Delhi: Solar Energy Centre, MNES, Gov. Of India
- Olgyay, Victor (1963) “*Design With Climate – Bio-Climatic Approach to Architectural Regionalism*” New Jersey: Princeton University Press
- Oliver, Paul (2006) “*Built to meet needs: cultural issues in vernacular architecture*” Burlington, Elsevier
- Rajagopalan, R. (2011) “*Environmental Studies: From Crisis to Cure*”

New Delhi: Oxford University Press

- Shah, M G, Padki. S Y & Kale, C M (2002) “*Building Drawing: with an Integrated Approach to Built Environment*” New Delhi: Tata McGraw-Hill Education
- Tipnis, Aishwarya (2012) “*Vernacular Traditions- Contemporary Architecture*” New Delhi: The Energy and Resources Institute.

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VII

L	T	P	C
1	-	1.5	2

Course Code	2PL019
Course Title	ENVIRONMENTAL LAW

Course Learning Outcomes (CLO):

At the end of the course students will be able to -

16. Learn about relevance of Environmental Law to Planning
17. Learn about Planning Legislations
18. Know details of Environmental Protection Legislation
19. Gain insights on case studies and court decisions in the field of Planning and Environmental Law

Syllabus:
hours: 37.5

Teaching

Unit 1 – Environmental and Planning Law

- Introduction to the course on environmental law
- Institutions and structures of the law and legal system as applied to natural resources for Planning such as land, water, etc
- Legal processes and the implementation of these processes
- Relevance to associated professions

177

- Difference between lawyers, environmental planners and experts.
- The relationship between environmental and planning law.

Unit 2 – Planning Legislation and Environmental Concerns

- **Planning Legislation:** Sections dealing with environmental concerns (GTPUD Act, 1976, Land Revenue Code, Land Acquisition Act)
- **Planning Processes of Key environmental resources**
- **Acts and Rules: Municipal Solid Waste Management (and Handling) Rules, 2000, CRZ, Climate Change Agreement**
- Other Relevant Acts related to Conservation, Health, Buildings, Climate Change
- **Community Consultation Processes**

Unit 3 –Environmental Protection Legislation

- **The Environmental Protection Act**
- **Water (Prevention of Pollution) Act**
- **Air (Prevention of Pollution) Act**

Unit 4 – Case Studies and Court Decisions

- Bhopal: Environmental Protection
- Reading Environmental Court Decision

Suggested Books/Readings/Acts:

- England 2011, Ch 1; Stein (2008; pp31-84); Day 2008; Nichols 2008; Bruce 1999
- England (2011; Chs 2, 3); Batch and Shaw (2010; pp3)
- Acts and Rules:
 - EP Act 1986
 - Air (Prevention and Control of pollution) Act
 - Water (Prevention and Control of pollution) Act

- Mines and Mineral Act
- Factories Act
- Pesticides Act
- Indian Forest Act
- Wildlife Act
- Ancient Monuments and Archaeological Sites and Remains Act
- Hazardous Waste Management and Handling Rules / Biomedical Rules / Solid Waste Management Rules
- Environment Tribunal Act
- Climate change Protocols and Conventions
- MOEF Guidelines and Notifications
- Appellate Authority Act
- Other related Notifications

TEACHING AND EXAMINATION SCHEME
B.ARCH.
SEMESTER VIII

<u>Sr.</u> <u>No.</u>	<u>Course</u> <u>Code</u>	<u>Course Title</u>	<u>Teaching Scheme</u>				<u>Examination Scheme</u>				
			<u>L</u>	<u>LPW/ PW</u>	<u>T</u>	<u>C</u>	<u>Duration</u>		<u>Component Weightage</u>		
							<u>S</u>	<u>E</u>	<u>CE</u>	<u>LP W/P W</u>	<u>SEE</u>
1	2PL811	Professional Practice for Planners	1	1.5	-	2	3	-	0.40	0.20	0.40
2	2PL812	Real Estate Planning And Management	1	1.5	-	2	3	-	0.40	0.20	0.40
3	2PL813	Thesis	-	24	-	16	-	-	0.60	0.40	-
-	-	Total	2	27	-	20	-	-	-	-	-
-	-	Total Weekly Teaching Hours	29				-	-	-	-	-
4	2PL850	Related Study Programme (RSP-2) #	Minimum 14 days x 8 hrs/day = 112 hrs.			3	-	-	-	1	-
			Total			23					

L: Lectures, P/T: Practicals/Tutorial, SEE: Semester End Examination
C: Credits

CE: Continuous Evaluation

LPW: Laboratory / Project Work

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VIII

L	T	P	C
1	-	1.5	2

Course Code	2PL811
Course Title	PROFESSIONAL PRACTICE FOR PLANNERS

Course Learning Outcomes (CLO):

At the end of the course the student would be able to –

- To understand the Professional Ethics, Roles and Responsibilities of Planners, Clients and Relationship with Public, Developers / Contractors; Professional Planners and other Professionals and Domain Experts
- To understand the Scope and Nature of Professional Work and to Quote Professional Fees and Charges.

Syllabus:
hours: 37.5

Teaching

Unit 1 Organization, Professional roles and scope of services

- Organization, Scope and Scale of Charges Aims and objectives of professional institutes, sister bodies
- Professional roles and responsibilities of planning consultants; professional ethics; responsibilities towards clients, fellow professionals and general public
- Scope of services for different projects like master plan for urban area, zonal/district plan, sector/neighborhood; layout group housing schemes, commercial centers, industrial estates etc; consultancy agreements, and safeguards; fees and scales of professional charges, competitions and copyrights.

Unit 2 Role of Planner

- Role of Planner Planning's input as professional at various levels and organizations, his role in decision making processes, relevant issues: generalists vs. specialists, professionals vs. technocrats, planner as decision maker vs. advisor to decision maker;
- Relationship with client, developers, institutions and contractors;
- Relationship with other experts such as engineers, architects, sociologists, economist, lawyers, etc. for specialized studies related to planning.

Unit 3 Fundamentals of valuation

- Valuation Fundamentals of valuation, ownership of land, compound interest theory calculating for present value,
- Concepts of economic rents and social rents, property taxes, sinking fund, annuity, depreciation, valuation tables;
- Legislative framework-rent control, land acquisition, easements and their effects on properties.

Unit 4 Methods of Real Property Valuation Income

- Methods of Real Property Valuation Income capitalization methods,
- Land and building method and other methods of valuation.

Unit 5 Contract documents and tenders

- Contract Documents and Project Formulation Tenders, contracts, arbitration
- Schedule of rates for construction; materials, labor and equipment for land development, unit and mode of measurements,
- Rate analysis; formulations of project proposals and outline.

Essential Readings:

- Planning Legislation and Professional Practice, ITPI, New Delhi
- URDPFI guidelines, ITPI, India
- Kulshrestha, S.K., Urban and Regional Planning in India: Handbook for Professional Practice, Sage publication, New Delhi, 2012
- Chandra Prasanna, Project s Planning, Analysis, selection, Implementation and Review, Tata McGraw Hill Publishing Company Pvt. Ltd., 2003.
- Conditions of engagement of Professional Services and scale of professional fee and charges, ITPI, New Delhi, 2011

Suggested Readings:

- CPWD Manual, 2012, CPWD Delhi
- CPWD Schedule of rates 2012, CPWD, New Delhi

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VIII

L	T	P	C
1	-	1.5	2

Course Code	2PL812
Course Title	REAL ESTATE PLANNING AND MANAGEMENT

Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

- Get acquainted to the basic terminologies of real estate market.
- Appraise a real estate project financially through standard methods.
- Understand housing development process
- Carry out valuation of real estate through different standard methods

Syllabus:
hours: 37.5

Teaching

Unit 1 - Real Estate Planning - Concepts and Techniques

- Real estate planning as a profession; Basis of real estate planning;
- Overview of real estate sectors- residential, commercial, retail, hospitality etc.;
- Real estate market analysis for residential sector; Demand assessment, supply mapping, competitive benchmarking and gap quantification

184

Unit 2 - Real property markets

- Heterogeneity and imperfections, valuation of real property - principles and practices.
- Private ownership and social control of land.
- Disposal of land. Land development charges and betterment levy.
- Land use restrictions, compensation and requisition taxation of capital gain on land versus public ownerships.
- Economic aspects of land policies at various levels of decision making.

Unit 3 - Housing Development Process

- Understanding of factors affecting residential location, institutional approach to housing;
- Housing subsystems and their characteristics: formal and non-formal housing;
- Public and private sector housing development process; co-operative housing movements. actors and their interrelationships;
- Inner city housing, Slums, Squatter housing, Unauthorized Housing;
- Role of different institutions in housing; International agencies, NGOs, State, Financing Organizations, Private developers, co- operatives.

Unit 4: Land & Property Valuations

- Valuation of real property - principles and practices;
- Methods of context specific valuation: depreciation method, comparative method, discounted cash flow method, development method;
- Private ownership and social control of land

Unit 5 - Policies, Programmes and Statutory Interventions

- Role of Government as regulator and facilitator;
- Real estate development: Government policies and programmes;
- Real estate development: statutory provisions;

- Urban land management and marketing- land development through bidding, reserve price, land reservation, land price subsidies;

Unit 6 - Case Studies

- Case studies of real estate development in public, private, partnership sectors.
- Real estate as facilitator of development.
- Development of real estate as a tool for controlling land and property prices.
- Transaction and renting of real estate, lease deeds / sale deeds, sale documents, registration.
- Mortgage and pledging.

Suggested Readings

- Armstrong, G. and Kotler P. (1996), Principles of Marketing, Prentice Hall of India, Delhi.
- D'Arcy, E. and Keog, G. (1998), Territorial Competition and Property Market Process: An exploratory analysis, Urban Studies, 35, No. 8, pp1215 – 1230.
- Egan, D. J. and Nield, K. (2000), towards a Theory Intra Urban Hotel Location, Urban Studies, 37, No. 3 pp 611 – 621.
- Evans, A. W. (1995), The Property Market, Ninety Percent Efficient? Urban Studies, 32, No. 1 pp 5 – 29.
- Gottlieb P. D. (1995), Residential Amenities, Firm Location and Economic Development, Urban Studies, Vol. 32, No. 9, pp 1413 – 1436.
- Ishikawa, T. and Tado, M. (2000), Some Economic Extension of Central-Place Theory Involving Profit Maximization, Urban Studies, 37, No. 3, pp 481 – 495.
- John R and Stubbs M et.al, (2017), Urban Planning and Real Estate Development, Taylor & Francis Ltd, New Delhi.
- Johnson, David E, (2016), Fundamentals of Land Development: A Real-World Guide to Profitable Large-Scale Development, John Wiley & Sons, New Jersey.
- Levy (1999), Retailing, Tata McGraw-Hill Publishing Company, New Delhi.
- Lloyd, P. E. (1972), Location in Space: A Theoretical Approach to Economic Geography, Harper and Collins Publishers, London.
- Lucas, G. and Kotler, P. et. el. (1997), Retailing, Macmillan Publishers, Delhi.
- Myers, Danny (2011), Economics and Property, Elsevier, Amsterdam.
- Scott, P. (1970), Geography and Retailing, Hutchinson University Library, London.
- Squires, Graham, ed. (2015), International Approaches to Real Estate Development, Routledge, New York

Nirma University
Institute of Architecture and Planning
Department of Architecture
B Plan (Bachelor of Planning)
Semester - VIII

L	T	P	C
	-	24	16

Course Code	2PL813
Course Title	THESIS

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

- Understand the research process and address research questions.
- Synthesize the knowledge and skills acquired through the learning of various theories and practices during the course.
- Arrive at a spatial planning solution / recommendation preceded by an extensive and intensive analyses of socio- economic, physical, institutional and statutory aspects.

Syllabus:
hours: 360

Teaching

Unit 1- Finalisation of Research Design

- Finalisation of dissertation title;
- Finalisation of research questions, scope and limitations,
- Clear goals and objectives along with scope of each objective should be outlined before establishing the need for conducting a research study.

187

- Substantive limitations of the research work should also be stated.

Unit 2 - Literature Review and Research Methodology

- Survey of literatures;
- Validation of research methodology (Presentation thereof)
- Previous published work on the subject area has to be critically examined for finding out existing thought processes of other authors and trends.

Unit 3 - Data Collection and Compilation

- Depending on the research topic, field surveys have to be designed and field work has to be done after conducting appropriate sample surveys.
- Tabulation of collected data; Preparation of charts, graphs, maps;
- Assessing additional data requirement (Presentation thereof)

Unit 4 - Data Analysis and Findings

- Field data and information and literature search findings should be synthesized to make final arguments and identification of planning issues.
- Analysis of collected information and data sets; Findings and inferences (Presentation thereof)

Unit 5 - Proposals and Recommendations

- Final specific planning proposals and recommendations should be made at various geographical levels.
- Proposals should directly emanate from analysis and should not be generalized.
- Thesis should contain a list of references as per international standards.
- Specific proposals can be preferably in spatial terms (Presentation thereof)

**NIRMA UNIVERSITY
INSTITUTE OF LAW
Academic Year: 2016-17
University Elective**

Introduction to the Indian Constitution

**Credit: 3
Hours: 45**

L	T	PW	C
3	-	-	3

Introduction:

India is a democracy and her Constitution seeks to establish its fundamental organs of government and administration, describe their structure, composition, powers and principal functions, define democracy through relationship of the organs with one another and with the people. The Constitution also guarantees certain Fundamental Rights to its citizens that are not to be infringed by the Government. A good understanding of the Constitution and the law, which has developed through constitutional amendments, judicial decisions, constitutional practice and conventions is, therefore, absolutely necessary for a student of law.

The purpose of teaching constitutional law is to highlight its never-ending growth. Constitutional interpretation is bound to be influenced by one's social, economic or political predilections. A student must, therefore, learn how various interpretations of the constitution are possible and why a significant interpretation was adopted in a particular situation. Such a critical approach is necessary requirement in the study of Constitutional law.

Course Learning Outcomes:

After the completion of the course the students will be able:

1. To understand the nature, scope and extent of the Fundamental rights
2. To understand the Composition, Role and Functions of Executive, Legislature and Judiciary.
3. To analyze and critic the interrelationship between the different organs of the Government i.e. Executive, Legislature and Judiciary.
4. To apply the knowledge of the constitutional provisions in solving the emerging challenges posed to the constitution.

Unit I: Introduction to Indian Legal System

- Constitution, Constitutionalism, Constitutional Law, Constitutional Conventions

-2-

- Historical evolution of the Constitution of India during British Raj
- Formation of Constituent Assembly
- Working of Constituent Assembly
- Salient Features of Indian Constitution

Unit II: Goal, Values, Ideals & Aspirations from the Constitution

- Objectives Resolution
- Preamble to Indian Constitution
- 42nd Amendment Act & the Preamble

Unit III: Nature of Indian Union

- Indian Union
- Formation, Creation and Establishment of new States under the Union
- Citizenship

Unit IV: Fundamental Rights

- Definition of State
- Definition of Law
- Right to Equality
- Fundamental Freedoms
- Right to Life & Personal Liberty
- Right against Exploitation
- Right to Religion
- Right to Constitutional Remedies

Unit V: Organs of the Government

- Union Executive
- Union Parliament
- Union Judiciary

Unit VI: Emergency Provisions

- National Emergency
- State Emergency
- Financial Emergency

Unit VII: Amendment to the Constitution

- Need for Amendment
- Types of Amendment
- Procedure for Amendment

Unit VIII: Constitutional Bodies

- Comptroller & Auditor General of India

- Finance Commission of India
- Election Commission of India

Unit IX: Panchayati Raj Institutions

- Committees
- 73rd & 74th Amendment Act
- Rural Local Bodies
- Urban Local Bodies
- PESA Act

Text Book:

1. M. P. Jain, Constitutional Law, 6th Edition Lexis Nexis Butterworths.
2. V. N. Shukla's, Constitution of India, 12th Edition, Eastern Book Company
3. J.N. Pandey, The Constitutional Law of India, 50th Edition, Central Law Agency

Reference:

1. H.M. Seervai, Constitutional Law of India (4th ed., Vol 1 (1991), Vol. 2 (1993), Vol.3 (1996)
2. D.D. Basu, Shorter Constitution of India (14th ed., 2009)
3. V.D. Sebastian, Indian Federalism the Legislative Conflicts (1985).
4. B. Shiva Rao, The Framing of India's Constitution – Select Documents (1967)
5. Granville Austin, Indian Constitution: Corner stone of the nation (1966)
6. Granville Austin, Working a Democratic Constitution - A History of the Indian Experience (1999)

-4-

P

SL



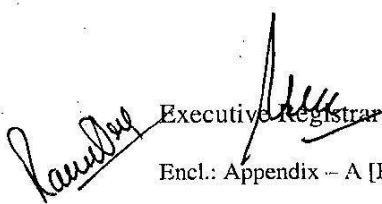
NU/AC/170417/IL/Uni Elec-IPR/17- 66
Date: 11.05.2017

NOTIFICATION

- Read: 1. **Regulation No. 44 of Academic Regulations for Admission to University, etc. published vide notification No. NU-442 dated 27.1.2004 – Empowering Academic Council to approve teaching & examination scheme, syllabus, etc.**
2. **Notifications mentioned in Handbook-IV, updated up to April, 2015**
3. **Notification Nos. NU-128, NU-138 to NU-148, NU-153, Nov. 2015**
4. **Notification Nos. NU-314 to NU-317, NU-322 to NU-325, Oct. 2016**
5. **Notification Nos. NU-006 to NU-007, Jan. 2017**
6. **Notifications published in Apr. 2017**
7. **Resolution No. 3 – Faculty of Law Meeting – 05.04.2017**
8. **Resolution No. 6(C) – Academic Council Meeting – 17.04.2017**

Sub: **Introduction of University Elective course- 'Intellectual Property Rights' along with its syllabus**

It is, hereby, notified for information of all concerned that, the Academic Council in its meeting held on 17.04.2017 under resolution No. 6(C); in exercise of powers conferred upon it by the Board of Governors under regulation mentioned at serial 1 above, taking into consideration the recommendation of Faculty of Law, has resolved to approve the *introduction of University Elective course- 'Intellectual Property Rights'* along with its syllabus, to be offered to the students of various Institutes, *other than* Institute of Law to be made effective from academic year 2017-18 and onwards as per *Appendix-A* attached herewith.


Executive Registrar

Encl.: Appendix – A [Pages 1 to 2]

- To,
1. All Heads of Institute
 2. Dean, Faculty of Law
 3. Dy. Registrar (Examination)
 4. Chief Librarian

Copy to: P.A. to: ER, Dir (IL)

- c.f.w.cs. for information to:
1. Vice President
 2. Director General
 3. Director (A&GA)

Appendix-A
(Noti.No. NU-066
Acmtg. - 17.11.17)

NIRMA UNIVERSITY
INSTITUTE OF LAW
University Elective Course
Academic Year 2017-18

L	T	PW	C
3	-	-	3

Course Code	
Course Title	Intellectual Property Rights

Course Learning Outcomes:

At the end of this course the student will able to:

1. Understand on various facets of IPR including Trade Mark, Patent, Copyright and Design Law
2. Identify various issues and challenges related to IPR.

Syllabus

Teaching Hours: 45

Unit 1 Introduction

6 Hours

- 1.1 Concept of Property
- 1.2 Concept of Intellectual Property
- 1.3 Various Justification of Property
- 1.4 Introduction to TRIPS Agreement

Unit 2 Patent Law

9 Hours

- 2.1 Concept and basis of protection
- 2.2 Criteria of Patentability
- 2.3 Novelty, Utility and Non-obviousness
- 2.4 Non Patentable Inventions
- 2.5 Procedure for patent registration
- 2.6 Rights of Patentee and Infringement procedure
- 2.7 Green Patents
- 2.8 Leverage of Patents

Unit 3 Copyrights Law

8 Hours

- 3.1 Introduction and justification
- 3.2 Subject-Matter of Copyright
- 3.3 Literary, Dramatic, Musical, Artistic, Cinematograph Films and Sound Recordings
- 3.4 Copyright and related rights
- 3.5. Fair use

1

3.6 Rights covered under copyright & remedies for infringement

Unit 4 Trademarks Law

8 Hours

4.1 Concept and justification of trademarks protection

4.2 Types of marks - Distinctiveness, Descriptive marks, Generic marks and Well-Known Trademarks

4.3 Grounds of Refusal of Registration

4.4 Procedure for Registration

4.5 Rights of trademark owner and Infringement – passing off of trademarks

4.6 Trademarks and Geographical indication

Unit 5. Design Law

8 Hours

5.1 Basics of Design & Justifications for protecting designs

5.2 Features of Shape, Configuration, Pattern, or Ornament or Composition of Lines or Colour

5.3 Excluded Subject-Matter

5.4 Rights of Design owner and protection against Infringements

Unit 6. Traditional Knowledge and Biodiversity

6 Hours

6.1. Concept of Traditional knowledge

6.2 Bio-piracy and bio-prospecting

6.3 Access and benefit sharing under CBD

Suggested Readings:

- Ahuja V K, Intellectual Property Rights, Lexis Nexis- Butterworths, New Delhi, 2015
- B.L. Wadhwa, Law on Intellectual Property Rights, Universal Publication, 2014
- Cornish, W R, Cases and Materials on Intellectual Property, 3rd Ed. London: Sweet & Maxwell, 1999.
- Verkey Elizabeth, Law of Patents, Second Edition, Eastern Book Company, Lucknow, 2012

NIRMA UNIVERSITY
Institute of Management
University Elective

Course Title: Elements of Management

Credit Hours: 3

Course Number: UEIM004

Course Objectives

- To familiarize the students with the Management Discipline.
- To understand the role of a manager in managing people and organizational activities.

Learning Outcomes

At the end of the course, students will be able to:

1. Understand the major functions of management viz. Planning, Organizing, Leading and Controlling,
2. Describe the interrelationship among the various functions of Management
3. Develop a general management perspective, and

Syllabus

Module 1: NATURE & EVOLUTION OF MANAGEMENT

- Meaning & Scope of Management
- Management a Science and/or Art?
- Management Vs Administration
- Management as a Profession
- Evolution of Management Thought
- Early Classical Approaches – Scientific Management, Administrative Management, Bureaucracy
- Neo-Classical Approaches – Human Relations Movement, Behavioural Approaches
- Modern Approaches – Quantitative Approach; Systems Approach; Contingency Approach
- Management Process
- Functional Areas of Management
- Global Applications
- Management Practices in India

Module 2: MANAGERIAL ROLE & EXTERNAL ENVIRONMENT
<ul style="list-style-type: none"> • Role of Managers • Mintzberg's Ten Managerial Roles • Functions of Various Levels of Management • Managerial Skills • External Environment of the Organization & Its Impact on Organizational Operations • Globalization and Business Environment
Module 3: PLANNING AND ORGANIZING
Planning <ul style="list-style-type: none"> • Planning: Meaning, Need & Importance • Planning Process • Types of Plans; Objectives, Policies, Procedures and Methods • Nature and Type of Policies • Types of Planning; Advantages & Limitations • Forecasting: Need & Techniques •
Organizing <ul style="list-style-type: none"> • Division of Work • Departmentation; Definition; Departmentation by Function, Territory, Product/Service, Customer Group; Matrix Organization • Line & Staff; Span of Control • Authority; Delegation of Authority; Centralization & Decentralization; Formal and Informal Organizations
Module 4: Coordination and Control
Coordination <ul style="list-style-type: none"> • Need for Coordination • Types and Techniques of Coordination • Coordination Process • Coordination Characteristics • Coordination: Advantages and Limitations • Distinction between Coordination and Co-operation
Controlling <ul style="list-style-type: none"> • Concept of Controlling • Types of Controls • Design of Control Process • Control Methods – Financial; Budgetary; Operational; Quality; Information Systems & Control • Responsibilities of Managers

Module 5:Current Trends in Management
<ul style="list-style-type: none"> • Managing Diversity • Technology Management • Capability Development • Management of Family Owned Businesses • Relevance of Management to Modern Industries and Government
<ul style="list-style-type: none"> • Management Lessons from Indian Ethos

Suggested Readings

1. Stoner, J. A. F. & Freeman, R. E. Management, (6th Ed). Prentice Hall, 1995.
2. Prasad, L. M. Principles and Practice of Management. (7th Ed). Delhi: Sultan Chand & Sons. 2008.
3. Drucker, P. The Practice of Management. Elsevier Ltd. 1955, Reprint 2007.
4. Hampton, D. R. Contemporary Management. (2nd Ed). McGraw Hill. 1981, Reprint 2008.
5. Tripathi, P. C. & Pandey, P. N. Principles of Management . (5th Ed). New Delhi: Tata McGraw Hill. 2012.
6. Koontz,H., Weihrich, H. & Aryasri, R. Principles of Management. Tata McGraw Hill. 2004.

NIRMA UNIVERSITY
Institute of Management
University Elective

Course Title: Human Resource Management

Credit Hours: 3

Course Number: UEIM006

Course Objectives

- To introduce the students to human resource management function.
- To understand the people management role in organizations.

Learning Outcomes

At the end of the course, students will:

1. acquire an insight into the role and responsibilities of the HRM function.
2. learn about the different systems within HRM viz. Recruitment and Selection, Performance Management, Compensation Management, Employee Relationship Management and recognize their strategic contribution to business and organizations
3. carry out job and role analysis and write job descriptions.

Syllabus

Module I: Introduction
<ul style="list-style-type: none">• An Introduction to Human Resource Management• Skills and Competencies of a Human Resource Manager• Corporate Strategy and Human Resource Management
Module II: Manpower Planning and Talent Acquisition
<ul style="list-style-type: none">• Manpower Planning and Deployment• Job Analysis, Design and Redesign of Jobs• Recruitment & Selection
Module III: Managing and Rewarding Employee Performance
<ul style="list-style-type: none">• Performance Management• Compensation Management• Learning & Development

Module IV: Managing Employee Relations
<ul style="list-style-type: none"> • Employee Relationship Management • Industrial Disputes & Conflicts • Labour Legislation • Managing Employee Exit and Separations
Module V: Contemporary issues in Human Resource Management

Suggested Readings

- Dessler, G. Varkkey, B. (2011). Human Resource Management. (12th Edition). New Delhi: Pearson Education.
- Bernardin, J. H. (2007). Human Resource Management – An Experiential Approach. New Delhi: Tata McGraw Hill Publishing Company Limited.
- Singh B.D. (2004). Industrial Relations, Emerging Paradigms. New Delhi: Excel Books.
- Varkkey, B., Dutta, R. and Rao, G. P. (Eds). (2000). Value Creation: The Challenge of HR in the New Millennium. New Delhi: Tata McGraw-Hill Publishing Company Limited.
- Ramaswamy, E.A. (2000). Managing Human Resources: A Contemporary Text. New Delhi: Oxford University Press.
- Pande, S. and Basak, S. (2012). Human Resource Management. (1st Edition). New Delhi: Pearson Education.

NIRMA UNIVERSITY
Institute of Management
University Elective

Course Title: Financial Management

Credit Hours: 3

Course Number: UEIM007

Course Objectives

- To provide students with the basic understanding of financial management in an organizational context
- To help them understand the working of financial markets
- To enable them to use spreadsheets to perform financial analysis

Learning Outcomes

At the end of the course, students shall be able to:

1. Understand the significance of financial management to firm performance
2. Identify the variables important to making financial decisions
3. Perform primary investment decision analysis
4. Describe sources of funds and their costs
5. Perform basic financial analysis using spreadsheets

Syllabus

Module 1: Basics of Financial Management
<ul style="list-style-type: none">• Introduction to Financial Management• Role and Functions of the Finance function• Time Value of Money• Basics of Risk and Return
Module 2: Financial Markets and Instruments
<ul style="list-style-type: none">• The Financial System• Introduction to Financial Markets and Instruments• Sources and Cost of Capital

Module 3: Major Financial Decisions
<ul style="list-style-type: none"> • The Investment Decision • The Funding Decision • The Distribution of Profit Decision • Introduction to Working Capital Management • Managing Risk
Module 4: Using Spreadsheets in Finance
<ul style="list-style-type: none"> • Introduction to Financial functions in Spreadsheets • Spreadsheet Application Exercises

Suggested Readings

1. Chandra, P. (2010). Fundamentals of Financial Management. New Delhi: Tata McGraw Hill.
2. Khan, M. Y. & Jain, P. K. (2012). Fundamentals of Financial Management. New Delhi: Tata McGraw Hill.
3. Pandey, I. M. (2011). Essentials of Financial Management. New Delhi: Vikas Publishing House.
4. Ross, S., Westerfield, R. & Jordan, B. (2012). Fundamentals of Corporate Finance. New Delhi: Tata McGraw Hill.
5. Rustagi, R. P. (2011). Financial Management: Problems & Solutions. New Delhi: Taxmann.
6. Wachowicz J. M. & Van Horne, J. C. (2009). Fundamentals of Financial Management. New Delhi: PHI Learning

NIRMA UNIVERSITY
Institute of Pharmacy

(B. Pharm)
(Semester - VII)
University Elective

L	T	P	C
3	-	-	3

Course Code	UEIP007
Course Title	Advanced Instrumental Techniques

Scope:

This subject deals with the application of instrumental methods in qualitative and quantitative analysis of drugs. This subject is designed to impart a fundamental knowledge on the principles and instrumentation of spectroscopic and chromatographic technique. This also emphasizes on theoretical and practical knowledge on modern analytical instruments that are used for drug testing.

Objectives:

Upon completion of the course, the student shall be able to-

1. Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis
2. Understand the chromatographic separation and analysis of drugs.
3. Perform quantitative & qualitative analysis of drugs using various analytical instruments.

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

1. Recall the fundamental theory of different spectroscopic techniques. E-1
2. Recognize the fundamentals, instrumentation and application of various chromatographic methods S-17
3. Discuss the instrumentation and application of various spectroscopic techniques S-19
4. Describe various X-ray methods E-1
5. Apply the knowledge of chromatographic techniques for the separation of the component. ENT-13

Syllabus:

Teaching hours: 45 Hours

UNIT I

10 Hours

- **Spectroscopic Techniques**
UV-Visible spectrophotometry: Theory of electronic spectroscopy absorption by organic molecules, choice of solvent and solvent effect, applications of UV-Visible spectroscopy.
- **Infra-red spectrophotometry:** Absorption in the infrared region, factors influencing molecular vibrations, applications, interpretation of infra-red spectra, FTIR- Theory, Instrumentation.

UNIT II

10 Hours

- **Nuclear Magnetic Resonance Spectroscopy:** Basic principles, the theory of PMR spectroscopy, Instrumentation, Chemical shift, spin-spin coupling, factors affecting chemical shift and spin coupling, applications, ¹³C NMR spectroscopy, interpretation of NMR spectra.
- **Mass spectroscopy:** Basic principles, ion formation and types, Fragmentation rules, recognition of molecular ion peak, interpretation of spectra and applications.

UNIT III

10 Hours

- **Raman Spectroscopy:** Basic principle, instrumentation, applications.
- **Atomic absorption and atomic emission spectroscopy:** Basic principles, instrumentation, applications.
- **X-ray diffraction methods:** Introduction, Bragg's law, X-ray absorption and X-ray diffraction methods and applications.

UNIT IV

15 Hours

- **Separation techniques**
Classification of chromatographic methods based upon the mechanism of separation and mode of separation with its fundamental principle, instrumentation and application
High-Pressure Liquid Chromatography
Gas chromatography
High-Performance Thin Layer Chromatography

Suggested Readings[^]: (Latest edition)

1. Silverstein, R. M., Bassler, G. C., & Morrill, T. C. Spectrometric Identification of Organic Compounds, John Wiley & Sons, Inc., New York.
2. Kalsi, P. S., Spectroscopy of organic compounds. Place of publication not identified: New Age International Pvt
3. Skoog, D. A. H., James, F., & Nieman, T. A. Principles of Instrumental Analysis. Eastern press.
4. Lindsay, S. High performance liquid chromatography. Chichester: Wiley.

Proposed

5. Ferraro, J. R., Nakamoto, K., & Brown, C. W. Introductory Raman spectroscopy. Amsterdam: Academic Press.
6. The United States Pharmacopeia. By authority of the United States Pharmacopoeial Convention meeting at Washington, D.C., May 14 and 15, 1940. Easton, PA: Mack Print.
7. Sethi, P. D. HPTLC: High performance thin layer chromatography: Quantitative analysis of pharmaceutical formulations. New Delhi: CBS publ.

L= Lecture, T= Tutorial, P= Practical, C= Credit

^ this is not an exhaustive list

Civil Engineering Department

University Electives offered by Civil Engineering Department to be made effective from academic year 2015-16

UEIT009 **Environmental Conservation for Sustainable Development** [3 0 0 3]

Course Learning Outcome:

After successful completion of the course, student will be able to

- identify and analyse environmental issues related to developments and address suitable mitigation measures
- comprehend and formulate appropriate environmental pollution control methodology
- identify and assess environmental hazards, consequences and safety provisions
- select and evolve appropriate environmental monitoring and management strategies

Syllabus:

Developmental Activities and Environmental Issues: Environmental issues arising from developmental activities, nature and characteristics of environmental impacts of urban and industrial developments. Need for technological inputs addressing the multi-disciplinary nature of environment leading to sustainable development.

Environmental Pollution – Assessment and Control: Constituents, types, assessment and control of environmental pollution. Environmental indices and modelling tools for prediction and assessment of environmental quality. Fundamental pollution control systems, methodologies, operation and maintenance.

Environmental Health and Safety: Basic concepts and terms of environmental risk, identification and assessment procedures. Consequence and analysis of environmental and health hazards.

Environmental Monitoring and Management for Sustainance: Environmental management systems, monitoring and control of undesirable environmental implications. Linkages between technology, emission trading, economic gain and societal goals for sustainable development. Environmental cost benefit analysis, decision methods for evaluation of environmentally sound alternatives. Environmental regulations and legislation, international resource sharing issues, treaties and protocols.

Self Study:

The self study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self study contents.

References:

1. Howard S. Peavy, Donald R. Rowe, George Tchobanoglous, Environmental Engineering, McGraw-Hill International Editions-Civil Engineering Series
2. Larry W. Canter, Environmental Impact Assessment, McGraw-Hill International Editions
3. Environmental Concerns and Sustainable Development: Some perspectives from India, Sakarma Somayaji, Ganesha Somayaji, TERI Press
4. G. Bruce Wiersma, Environmental monitoring, CRC Press
5. Nicholas P. Cheremisinoff, Madelyn L. Graffia, Environmental Health and Safety Management: A Guide to Compliance, Jaico Publishing House

PROPOSED SYLLABUS

NIRMA UNIVERSITY INSTITUTE OF PHARMACY

UNIVERSITY ELECTIVE COURSE NAME: *HEALTH AND NUTRITION*

Learning Outcomes

After successful completion of the course student will be able to:

1. Remember the fundamentals of health and nutrition
2. Cite examples of food labelling
3. Describe significance of macronutrients and micronutrients
4. Discuss importance of functional foods
5. Explain indicators of nutritional status

Theory

L	P	C
3	--	3

1. Introduction to the basic concepts of health and nutrition
2. Nutrition
 - Macronutrients: Carbohydrates (including dietary fibers), fats and proteins
 - Micronutrients: Vitamins, minerals, anti-oxidants, gut flora
 - Significance of macronutrients and micronutrients for optimal health
3. **Meal Planning**
 - Functional foods: Definition of functional foods, Role of functional ingredients and food in nutrition, Health attributes of functional foods
 - **Health attributes of nutrition: Diet and disease, Diet with respect to special population (elderly, pediatric and pregnant women),**
 - Indicators for maintenance of nutritional status: Nutrition Balance Indicator, Satiety Index, Fullness factor, Glycemic index and insulin index
4. Food Labelling (**Food service management**)
 - Nutrition Facts Panel
 - Serving Size
 - Calories
 - Ingredients list
 - Quantitative indications
 - Food additives
 - The percent daily value
 - Allergan labelling

**NIRMA UNIVERSITY
INSTITUTE OF PHARMACY**

UNIVERSITY ELECTIVE

COURSE NAME: COSMETIC TECHNOLOGY

Learning Outcomes:

After successful completion of the course student will be able to :

- Acquire comprehensive **knowledge about the various raw materials** used in cosmetic formulations
- Create and **develop cosmetic formulations**
- **Analyze the cosmetic formulations** for evaluating its efficacy and safety
- Understand the **regulatory guidelines** related to cosmetic formulations

Theory (Detailed Syllabus)

L P C
3 - 3

1. Introduction: The scope, historical background and present status of herbal cosmetics.
2. Classification of Cosmetics.
3. **Raw materials used for formulation of skin care and hair care cosmetics:** Source and description of raw materials of natural origin like fixed oils, waxes, gums, hydrophilic colloids, colours, perfumes, protective agents, bleaching agents, preservatives, antioxidants and other ancillary agents used in the cosmetic formulations.
4. **Formulation and analysis of cosmetics:** hair care, skin care and oral care products.
5. **In vitro and in vivo models** for efficacy testing for various cosmetic products.
6. **Regulatory guidelines:**

Compliance of Drug & Cosmetic Act 1940 with reference to provisions for packaging and labelling (Rule 150 A, schedule S), permitted colors, flavors etc.
BIS guidelines for cosmetic products and raw materials.

Total Lectures: 45

Books Recommended:

1. Sagarin Edward, Cosmetic Science and Technology Vol. I, II, III , Wiley India Pvt. Ltd., Canada, 1992
2. Sharma P.P., Cosmetic Formulation, Management and Quality Control, Vandana Publications Pvt. Ltd., Vandana Publications, Delhi, 2010
3. Paye M, Barel A.O., Maibach H.I., Handbook of Cosmetic Sciences, Informa Press, Tylor and Fransis, LLC, 2006
4. Panda H., Herbal Cosmetics Handbook, Asia pacific Business press, 2004
5. Veermeer B.J., Cosmeceuticals: Drugs vs. Cosmetics, Marcel Dekker, Editors: Peter Elsener, Howard I. Maibach, Marcel Dekker Inc., New York, 2000.

NIRMA UNIVERSITY
Institute of Pharmacy

L	T	P	C
3	-	-	3

Course Code	UEIP007
Course Title	Drug Discovery and Development

Course Learning Outcomes (CLO):

After successful completion of the course, student will be able to –

1. Understand the overall process for drug discovery and development.
2. Describe various methods of drug discovery.
3. Discuss different techniques of drug design and molecular modeling.
4. Explain the role of combinatorial chemistry in rational drug design.
5. Use bioinformatics, cheminformatics, genomic and proteomics knowledge for drug discovery.

Syllabus:

Teaching hours: 45 Hours

UNIT I

10 Hours

Introduction to Drug Discovery and Development

- Historical development, drug development pipelines, various stages and their importance, improvement of existing drugs, pre-marketing development of drugs, synthetic screening including extensive screening, random screening of intermediates and final leads, source of new drug discovery.

UNIT II

10 Hours

Methods in Drug Discovery

- Introduction, structure activity relationships and quantitative structure activity relationships, structure toxicity relationships, various physiological properties, mathematical models, experimental and theoretical approaches of physicochemical parameters, parameter inter-dependence, case studies.

UNIT III

10 Hours

Drug Design and Molecular Modeling

- General introduction, pharmacophore model, primary biological targets, structural determination of primary targets, introduction to docking, molecular docking, *in silico* prediction by molecular docking, methodologies with suitable case studies.

UNIT IV

10 Hours

Combinatorial Chemistry in Drug Design

- Introduction, principle of combinatorial chemistry, synthetic methodologies including solid phase synthesis (SPS) and solution phase chemistry, high throughput screening, library preparation.

UNIT V

05 Hours

Bioinformatics, Cheminformatics, Genomic and Proteomics

- Introduction, application, significances in new drug discovery, suitable case studies in each topic.

Suggested Readings[^]: (Latest edition)

1. Robert, G.C.K. ed. *Drug Action at the Molecular Level*. University Park Press Baltimore.
2. Cohen N. C. *A Guidebook on Molecular Modeling and Drug Design*. Elsevier Publications.
3. Wilson, C. O., Beale, J. M., & Block, J. H. Wilson and Gisvold. *A textbook of organic medicinal and pharmaceutical chemistry*. Lippincott Williams & Wilkins.
4. Foye, W. O. *Foye's principles of medicinal chemistry*. Lippincott Williams & Wilkins..
5. Koro I.A. Burckhalter J.H. *Essentials of Medicinal Chemistry*. Wiley Interscience
6. Burger, A., & Abraham, D. J. *Burger's medicinal chemistry and drug discovery* (Vol. I–IV). Wiley.
7. Krogsgaard, P. *A textbook of Drug Design and Development*. Harwood Academics.
8. Smith, H. J., & Williams, H. (2016). *Introduction to the principles of drug design*. Elsevier.
9. Silverman, R. B., & Holladay, M. W. (2014). *The organic chemistry of drug design and drug action*. Academic press.

L= Lecture, T= Tutorial, P= Practical, C= Credit

[^] this is not an exhaustive list

NIRMA UNIVERSITY
Institute of Management
University Elective

Course Title: Fundamental of International Business

Credit Hours: 3

Course Number: UEIM003

Course Objectives

- To introduce the students various concepts and issues in international business and related activities.
- To evaluate global business opportunities and develop skills to deal with various issues involved in cross-border transaction of goods, services and other resources between two or more nations.

Learning Outcomes

At the end of the course, students shall be able to:

1. understand and evaluate the basis of international trade and business.
2. explain the various methods of entry into foreign markets and assess the suitable mode for international business.
3. understand the concept of globalization and discuss the implications of GATT/WTO in international business.
4. understand the India's institutional and policy framework for international business.

Syllabus

Module 1: AN OVERVIEW TO INTERNATIONAL BUSINESS
Introduction <ul style="list-style-type: none">• Evolution Of International Business• Stages Of Internationalization• International Business Approaches• Importance Of Cross Cultural Differences In International Business• Modes Of Entry Into International Markets• Advantages And Problems Of International Business

Module 2: CONCEPTUAL FRAMEWORK: INTERNATIONAL TRADE, INVESTMENT, BALANCE OF PAYMENT AND TERMS OF PAYMENT
<ul style="list-style-type: none"> • Mercantilism • Theory Of Absolute Cost And Comparative Cost Advantage • Relative Factor Endowment Theory • Product Life Cycle Theory • Porter's National Competitive Advantage Theory • Foreign Collaboration/Technology Transfer Related Issues • Factors Influencing FDI • Reasons And Cost And Benefits Of FDI • Concept Of Balance Of Payments And Its Components • Terms Of Payment
Module 3: GLOBALISATION, WORLD TRADE ORGANISATION AND REGIONAL ECONOMIC INTEGRATION
<ul style="list-style-type: none"> • Concept Of Globalization • Drivers Of Globalization • Globalization Of Markets, Production, Investment, Technology • Advantages And Disadvantages Of Globalization • General Agreement Of Tariff And Trade • Uruguay; Round, Establishment Of WTO And Various Agreement Of WTO • GATS - Trade In Services • Concept Of Regional Integrations And Regional Blocks
Module 4: INDIA'S INSTITUTIONAL AND POLICY FRAMEWORK FOR INTERNATIONAL BUSINESS
<ul style="list-style-type: none"> • Policy And Service Support Organizations • Commodity Specialization • Training And Research Institutions • Trading / Service Corporations • Risk Covering Institutions • Financial Institutions • Institutions Especially For SSIs and State Participation • An Overview Of India's Foreign Trade Policy And Procedure

Suggested Readings

- Carbaugh J. R. International Economics. Bangalore: Thompson South-Western, Latest Edition.
- Chugan, P. K. International Technology Transfer. Mumbai: Himalaya Publishing House.
- Czinkota R.M., Ronkained I.A. and Moffet, M.H. International Business. Bangalore: Thompson South-Western. Latest Edition.
- Foreign Trade Policy and Handbook of Procedures. New Delhi: Centax Publications. Latest Edition.
- Francis C. International Business Environment. New Delhi: Prentice-Hall India, Latest Edition
- Joshi, R. M. International Business. New Delhi: Oxford University Press. Latest Edition.
- Mithani, D.M. International Economics. Mumbai: Himalaya Publishing House. Latest Edition.
- Paras R. Export – What, Where and How. New Delhi: Anupam Publications. Latest Edition.
- Paul, Justin. International Business. New Delhi: PHI Learning Pvt. Ltd. Latest Edition
- Rao, S. P. International Business; Text and Cases. Mumbai: Himalaya Publishing House. Latest Edition.