Annex-III

of Academic Council Meeting
of SPAV held on 18.06.2015

Master of Planning

(Urban and Regional Planning)

Course Structure and Syllabus for
Two Year Masters Degree Programme in Planning

(As approved by the
Academic Council of SPAV on its V Meeting held on June 18, 2015
and
Board of Studies in Planning on its Meeting held on November 18, 2014
and ratified on March 07, 2015 at SPAV Nidamanuru campus)

(Effective from Academic Year 2014-15)

योजना तथा वास्तुकला विद्यालय, विजयवाडा
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An Institute of National Importance, MHRD, Govt. of INDIA.

Introduction to
Master of Planning (Urban and Regional Planning)

Master of Planning (Urban & Regional Planning), abbreviated as M.Plan (URP), is a masters degree course in planning offered by School of Planning and Architecture, Vijayawada. It offers specialisation in Urban & Regional Planning.

The key objective of the course is to equip the students with adequate skills required to comprehend urban and regional issues and to analyse physical, socio-economic, cultural, political and ecological dimensions of the human settlements. The course is designed to provide necessary exposure to various planning processes, emerging trends and other related advanced technical knowhow. It intends to contribute towards the creation of professionals in the field and hence to cater to the specific needs of the industry and academics. During the course, the students will be provided with ample opportunities to interact with the subject experts, relevant organisations, etc. The course enables the students to gain real time experience through their involvement in the ongoing or live projects.

M.Plan (URP) is a two-year course consisting of four semesters. The course structure and syllabus is designed in coherence with the *Model Curriculum for M.Plan / M.Tech (Planning), All India Council for Technical Education, 2011.* The course structure is a combination of various subjects, which includes studios, labs, theory, and field visits. The broad course structure is as follows:

The **first semester** is an integrated semester common to all master courses of planning offered by the school. The studio focuses on area planning. Subjects offered are introduction to information systems, evolution of human settlements and planning, planning techniques and quantitative methods, habitat and environmental planning, infrastructure planning, and socio economic dimensions in planning.

The **second semester** focuses on urban planning and consists of the related subjects, such as applications of geo-informatics, city and metropolitan planning, land economics and management, advanced infrastructure planning, and urban and regional governance.

The **third semester** focuses on regional planning. Subjects offered in this semester are advanced research methods, planning legislation and professional practice, rural planning and development, project planning and management, and disaster preparedness and management.

In the **fourth semester**, students would be required to undertake thesis. In addition, two theory subjects are offered. These include development finance, and planning and politics.

There are ten electives offered in the second and third semesters in total. Each course is divided into four sections consisting of the subject details, objective, units and suggested readings. The subject syllabus is broken into progressive five sections through the units, to be taught over the semester. However, it may be noted that the syllabus covered is not exhaustive and the individual subject teacher may augment the syllabus as per his/her perception of the subject. In such cases, prior concurrence of the Head of the Department is necessary.

The syllabus is designed so as to develop strong communication, interpersonal, advocacy and analytical skills of the student. The subject faculty members are encouraged to assess the students in a progressive manner throughout the semester through seminars, debates, video documentation group/individual presentations, term papers, written exams (open or closed book), take home exams, report submissions, viva voce, etc.

First Semester (Integrated)

Code	Course Titles	Distribution of Marks				Distribution of Periods per week			Credits
		IA	EE	EJ	TM	L	P	TP	
MPIS102	Introduction to Information Systems	50	-	50	100	0	3	3	3
MPIS103	Evolution of Human Settlements and Planning	50	50	-	100	3	0	3	3
MPIS104	Planning Techniques and Quantitative Methods	50	50	-	100	3	0	3	3
MPIS105	Habitat and Environment Planning	50	50	-	100	3	0	3	3
MPIS106	Infrastructure Planning	50	50	-	100	3	0	3	3
MPIS107	Socio-Economic Dimensions in Planning	50	50	-	100	3	0	3	3
MPIS101	Area Planning Studio	200	-	200	400	0	12	12	12
	TOTAL:	**500**	**250**	**250**	**1000**	**15**	**15**	**30**	**30**

Second Semester

Code	Course Title	Distribution of Marks				Distribution of Periods per week			Credits
		IA	EE	EJ	TM	L	P	TP	
MPUR202	Applications of Geo-informatics	50	-	50	100	0	3	3	3
MPUR203	City and Metropolitan Planning	50	50	-	100	3	0	3	3
MPUR204	Land Economics and Management	50	50	-	100	3	0	3	3
MPUR205	Advanced Infrastructure Planning	50	50	-	100	3	0	3	3
MPUR206	Urban and Regional Governance	50	50	-	100	3	0	3	3
MPUR201	Urban Planning Studio	200	-	200	400	0	12	12	12
	ANY ONE								
MPUR211	Elective 1: Inclusive Planning	50	50	-	100	3	0	3	3
MPUR212	Elective 2: Demography and Planning	50	50	-	100	3	0	3	3
MPUR213	Elective 3: Smart Cities	50	50	-	100	3	0	3	3
MPUR214	Elective 4: Urban Renewal	50	50	-	100	3	0	3	3
MPUR215	Elective 5: From other Masters programme (same semester)	50	50	-	100	3	0	3	3
	TOTAL:	**500**	**250**	**250**	**1000**	**15**	**15**	**30**	**30**

IA = Internal Assessment EE = End Evaluation EJ = External Jury
TM = Total Marks L = Lecture Periods
P = Practicals/ Lab/Workshop Periods TP = Total Periods

MPIS104 is to be read as:
MP = M.Planning; IS = Integrated Sem; 1 (1st digit) = 1st Sem; 0 (2nd digit) = Subject; 4 (3rd digit) = 4th Subject.

MPUR212 is to be read as:
MP = M.Planning; UR = Urban & Regional; 2 (1st digit) = 2nd Sem; 1 (2nd digit) = Elective Subject; 2 (3rd digit) = 2nd Elective Subject.

Note: Compulsory summer professional training / internship (four weeks) after second semester

Third Semester

Code	Course Title	Distribution of Marks				Distribution of Periods per week			Credits
		IA	EE	EJ	TM	L	P	TP	
MPUR302	Advanced Research Methods	50	-	50	100	0	3	3	3
MPUR303	Planning Legislation and Professional Practice	50	50	-	100	3	0	3	3
MPUR304	Rural Planning and Development	50	50	-	100	3	0	3	3
MPUR305	Project Planning and Management	50	50	-	100	3	0	3	3
MPUR306	Disaster Preparedness and Management	50	50	-	100	3	0	3	3
MPUR301	Regional Planning Studio	200	-	200	400	0	12	12	12
	ANY ONE								
MPUR311	Elective 1: Future Settlements	50	50	-	100	3	0	3	3
MPUR312	Elective 2: Special Area Planning	50	50	-	100	3	0	3	3
MPUR313	Elective 3: Human Settlements and Climate Change	50	50	-	100	3	0	3	3
MPUR314	Elective 4: Tourism Planning and Development	50	50	-	100	3	0	3	3
MPUR315	Elective 5: From other Masters programme (same semester)	50	50	-	100	3	0	3	3
	TOTAL:	**500**	**250**	**250**	**1000**	**15**	**15**	**30**	**30**

Fourth Semester

Code	Course Title	Distribution of Marks				Distribution of Periods per week			Credits
		IA	EE	EJ	TM	L	P	TP	
MPUR402	Development Finance	50	50	-	100	3	0	3	3
MPUR403	Planning and Politics	50	50	-	100	3	0	3	3
MPUR401	Planning Thesis	400	-	400	800	0	24	24	24
	TOTAL:	**500**	**100**	**400**	**1000**	**6**	**24**	**30**	**30**

IA = Internal Assessment EE = End Evaluation EJ = External Jury / Viva Voce
TM = Total Marks L = Lecture Periods
P = Practicals/ Lab/Workshop Periods TP = Total Periods

MPUR303 is to be read as:
MP = M.Planning; UR = Urban & Regional; 3 (1st digit) = 3rd Sem; 0 (2nd digit) = Subject; 3 (3rd digit) = 3rd Subject.

MPUR312 is to be read as:
MP = M.Planning; UR = Urban & Regional; 3 (1st digit) = 3rd Sem; 1 (2nd digit) = Elective Subject; 2 (3rd digit) = 2nd Elective Subject.

Note: Credits for each subject are the same as the number of lecture / practical hours per week, whichever is higher.

First Semester (Integrated)

MPIS102 Introduction to Information Systems

Number of Credits	3	Subject Category	Lab
Lecture Periods/Week	0	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	3	External Jury	50
Total Periods/Week	3	Total Marks	100

Objective: To make aware of the information systems and develop basic computing skills relevant to planning.

Unit 1: Information System Concepts and Components

Definition of Information Systems, functions of an information system, components, hierarchy, types, flows, loops; Introduction to DBMS.

Unit 2: Information Systems for Planning

Systems approach to planning, use of information systems for planning, relevant softwares for CAD, GIS, Remote Sensing.

Unit 3: Data Sources

National Urban Information System (NUIS), National Spatial Data Infrastructure, Natural Resources Data Management System, Bio-diversity information System; Indian Bio resource information Network, Water Resource Information System (WRIS), Environmental Information System; Bhuvan; National Remote Sensing Centre; Indian Space Research Organization (ISRO); Census of India, National Sample Survey Organisation (NSSO), Directorate of Economics and Statistics, University Consortium for Geographic Information System (UCGIS); standardization of software, Open Geospatial Consortium (OGC) , GIS libraries; GDAL/OGR, Central Statistical Office (CSO), Archaeological Survey of India (ASI), National Family Health Survey (NFHS), Pollution Control Boards, Meteorology.

Unit 4: Information and Communications Technologies

Introduction to computer hardware and software; Communications technologies and Networks; Servers and its types; data storage systems, files and databases; Operating software; applications packages and user written programs; Open source and proprietary GIS software; Web GIS and Location Based Services.

Unit 5: Future Information Systems

Cloud computing; Characteristics and components; 3D visualization; Big data management; Online Analytical processing; Data warehousing and data mining; Data sharing and security.

Suggested Readings:

1. Richard G., and McLaughlin J (2010), *Geospatial Data Infrastructure Concepts, Cases and Good practice*. Oxford Unviersity Press, Oxford.
2. Government of India (2008), *NSDI Metadata standard-NNRMS Secretariat*, Department of Space, India.
3. J.K.Berry (1996), *Beyond Mapping; Concepts, Algorithms, and Issues in GIS*. Wiley Publications, London.
4. Laudon, K., & Laudon, J. (2014), *Management Information Systems. (13 ed.,)*. Saddle River: Prentic Hall publications, New Jersey.

MPIS103 Evolution of Human Settlements and Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To equip the students with the required knowledge of conventional and contemporary planning thought, pluralistic nature of values in the profession, planning approaches and models. Focus would be on integrating procedural and substantive elements of planning theory to current and future planning practices.

Unit 1: Planning Concepts

Settlement systems, Classification of settlements, primate city, 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; push and pull factors; migration; need for planning; Scalar arrangements in Planning (regional, mega, metro regions, city and local area plans).

Unit 2: Rational Planning Approaches and Models

Systems approach to planning; Comprehensive development plan; Pluralism in planning; Strategic planning; Structure plans; Incremental planning; Equity based planning; Inclusive planning; Feminist planning theory; Participatory planning – Collaborative and communicative planning; local area plans, phasing of plan, integration with five year plans, annual plan, etc. Models - Gravity model; Intervening opportunity models; Political economy model; New economic geography models & globalisation models.

Unit 3: Techniques of Plan Preparation

Surveys, Techniques of conducting surveys for land use, building use, density, structural condition of buildings, heights of building, land utilization and physical features of land; Techniques of mapping – methodologies, physical surveys, land use classification, base map preparation for various levels of plans. Data requirement for various types of plans; Planning standards and regulations – Spatial standards, performance standards and standards for utilities, URDPFI guidelines, development control regulations.

Unit 4: Methods and Tools

Analytical methods - linear programming, threshold analysis, simulation, rank size rule, scalogram, sociogram, cluster and factor analysis, delineation techniques, SWOT analysis; demographic analysis; location models, gravity models.

Unit 5: Emerging and Future Trends

Emerging school of thoughts and doctrines; Recent and contemporary contributions to the changing planning paradigms; Planning for future and in future - vision development, strategising, Implementation of planning policies and development plans.

Suggested Readings:

1. Baker, M. (2001), *Some Reflections on Strategic Planning Processes in Three Urban Regions*. Planning Theory and Practice, 2, (2), pp. 230-235.
2. Faludi. A (1973), *Planning Theory;* Pregamon Press, Oxford, England, U.K.
3. Friedman, J (2005), *The World is Flat: A Brief History of 21st Century;* Farrar, Straus and Giroux publishers, NY.
4. Lane, M. B. (2005), *Public Participation in Planning: An Intellectual History*, Australian Geographer, 36(3), 283-299.

MPIS104 Planning Techniques and Quantitative Methods

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: *To acquire proficiency in statistical techniques and able to conduct empirical studies employing statistical software*

Unit 1: Introduction to Statistical Methods

Statistical data - Types of data: nominal, ordinal, interval and ratio; Discrete versus continuous data; Numerical data – properties and measures; Standard notation; Data collection, coding and decoding, methods, tabulation and graphic presentation of data; Frequency distribution; Measures of central tendency- mean, median, mode; Measures of dispersion – range, variance, standard deviation, skewed distribution, kurtosis; Introduction to spread sheets and statistical software.

Unit 2: Probability, Sampling distributions and Testing of Hypothesis

Introduction to probability; Discrete random variables and probability distribution; Sampling distributions–T and F distribution; Tests of hypothesis- type I & II errors, one-tailed and two tailed tests, chi-square test, student T test.

Unit 3: Correlation and Regression

Correlation – scatter plot diagrams, correlation coefficients, simple correlation, partial correlation; Least square method; Assumptions of regression analysis, linear regression, multiple regressions; Dummy variables; Functional forms; Binary dependent variables; Instrument variables; Time series analysis.

Unit 4: Application of Vital Statistics in Spatial Planning.

Elementary association models and decision making; Index numbers, weighted and un-weighted index numbers; Application of index number in spatial planning; calculation techniques of vital events.

Unit 5: Demography

Methods of demography and population studies – population projections, introduction to Census data and sample surveys.

Suggested Readings:

1. Agarwal B L (2007), *Programmed Statistics.* New Age International Publishers, New Delhi.
2. Alan C. Acock (2012), A *Gentle Introduction to STATA*. Revised Third Edition.
3. Gupta and Gupta (2012), *Business Statistics*. Sultan Chand and Sons, Delhi.
4. Wooldridge (2011), *Introductory Econometrics: A Modern Approach.* Thomson Press, Noida.

MPIS105 Habitat and Environment Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To give insights on global and local issues of environment concern and introduce fundamental concepts and policies related to housing.

Unit 1: Components of Nature and Ecology

Meaning and components of nature; Basic concepts of ecology, process of flow of material, water, energy, invasion, succession, perdition, regulatory forces, adaptation, tropic levels, food chains, food web, ecological pyramids; Ecology and their relevance to planning; Modifications in natural environment, causes and consequences.

Unit 2: Global & Local Concerns for Environment

Evolution of human settlements; Civilizations and impact on environment; Contemporary environmental discourse; Green agenda and brown agenda; Global environmental movement; Environment and poverty; Environmental management and environmental planning; Global warming, climate change; Biological diversity; Brunt land's Commission's Report; Agenda 21; Club of Rome Report; UNEP charters.

Unit 3: Environmental Resources: Consumption, Conservation and Recycling

Environmental resources and ecosystem services; Concepts of natural reserves; Consumption, conservation and recycling of resources; India's environmental programmes; Government of India's policies relating to forest, wildlife, hill, water resources, wastelands, hills, coastlines, oceans, etc.

Unit 4: Housing and Built Environment

Significance of housing in national development goals; Housing as a basic entitlement - core issues of housing, factors affecting residential location, theoretical knowledge of ecological, neo-classical, institutional approach to housing; estimating housing shortage, housing need, current methods of demand assessment, typologies of housing, housing norms; Densities and standards; Urban sprawl and environmental damages; Gender based planning of neighbourhoods and human settlements.

Unit 5: Housing Sectors, Acts and Policies

Affordable Housing; Housing for the low income groups – slums and squatter settlements, investment in housing in public and private sectors; Cooperative housing, objectives and principles, management and financing of housing projects; Acts, policies and programmes; Comparative policy analysis.

Suggested Readings:

1. Centre for Science & Environment (2006), *State of India's Environment – A Citizen Report,* CSE, New Delhi.
2. Charles Correa (2000), *Housing and Urbanisation.* Thames and Hudson, New York.
3. Glenn H. B. (1966), *Housing and Society.* The Macmillan Company, New York.
4. Pachauri, R. K (1999), *Looking Back to Think Ahead.* TERI, New Delhi.

MPIS106 Infrastructure Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide exposure to infrastructure and its sub-sectors relevant to physical planner in planning and design of urban and regional Infrastructure.

Unit 1: Introduction to Infrastructure Planning

Importance of infrastructure, objectives of the utilities, services planning and implications on public health and environment; Economic - introduction to policies and programmes in infrastructure planning; Issues and concerns of maintaining the utilities and services, need and importance of service level benchmarks of water supply, sanitation, sewerage, solid waste and transportation.

Unit 2: Physical Infrastructure

Role of physical planner in planning of utilities and services; Water supply distribution system, storm water drainage system, sewerage system, solid waste management, electricity distribution system.

Unit 3: Social Infrastructure

Types of social infrastructure; Health care - essential service, availability, access and utilisation, standards, public and private institutions, policies, National Rural Healthcare Mission, hierarchy of health care establishments; Education - primary and secondary educational institutions, standards, policies, right to education (RTE); Public and community spaces – recreational, safety and security.

Unit 4: Transportation

Introduction to transport and travel; Understanding travel from the mobility, economic, social-psychologist, time/space perspective; Transportation planning process; Introduction to four stage modelling; Land use and transportation integration; Demand and supply of transport; Congestion pricing, transit orient development; Transport Pricing, Basic transport economic model.

Unit 5: Emerging and Future Infrastructure

Spatial data as infrastructure; Impact of technology on infrastructure; Other concepts, components and frameworks.

Suggested Readings:

1. Dinesh M, Omer T, Michael S, Michael J, (2009), *Road Safety in India: Challenges and Opportunities*. University of Michigan, Transport Research Institute. (http://tripp.iitd.ernet.in/DM_UMTRI-2009-1[1].o.pdf)
2. Government of India, (2010), *Service level benchmarks for urban transport* . Ministry of Urban Development. http://urbanindia.nic.in/programme/ut/Service_level.pdf)
3. Jaun de Dios Ortuzar, Luis G.Willumsen, Wiley, (2011), *Modelling Transport* (4th Edition), Routledge.
4. Jean-Paul Rorigue, Claue Comtois, Brian Slack, (2006), *The Geography of Transport Systems*. Routledge.

MPIS107 Socio-Economic Dimensions in Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide exposure to concepts, theory and issues relating to socio-economic aspects towards planning of settlements. Also provide understanding of the society and the economy of the nation and its importance in spatial planning.

Unit 1: Introduction to Sociology

Definition and scope of sociology; Concepts of sociology-society, social systems, social structure, institution and organization; Concept of space and people; Sociology and planning.

Unit 2: Social Groups, Social Issues, Rural and Urban Sociology

Contemporary sociological theories; Social structure and social change; stratification and social inequality; Introduction to agrarian, industrial and modern society and spatial formation; Linking social structure and physical structure of village and urban settlements; marginality, vulnerability, social inclusion and exclusion; Inequality and equity; Children youth and gender centred planning.

Unit 3: Applied Economics – Goods and Services

Definition of economics - terms used in economics related to urban and regional planning (URP); central problems of economics; Basics of micro and macroeconomics; use of economics in planning; Definition of need, demand, and supply; Law of demand and supply, types of demand; Theory of demand and utility; Elasticity of demand and supply- its use in planning; Types of economics and their application in spatial planning.

Unit 4: Land Economics

Economic concepts of land, objectives and scope of land economics, relevance for spatial planning; Economic principles of land uses; Economic rent, land use and land values, market mechanism and land use pattern.

Unit 5: Economics of Location and Planning.

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; Techniques of cost-benefit analysis of urban development programme.

Suggested Readings:

1. Benjamin S (2008), *Occupancy Urbanism: Radicalizing Politics and Economy beyond Policy and Programs*, International Journal of Urban and Regional Research, Vol. 32.3, September, 719-729.
2. Brenner N and Theodor N (2002), *Cities and Geographies of "Actually Existing Neoliberalism"*, Antipode, Vol. 34, Issue 3, 349-379.
3. De Souza M (2010), *Which Right to Which City? In Defense of Political- Strategic Clarity*. Interface, Vol. 2(1), May, 315-333.
4. Jan L, Christopher M. (2012), *The Urban Sociology Reader.* Routledge, London.

MPIS101 Area Planning Studio

Number of Credits	12	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	200
Practicals /Lab/Workshop Periods/Week	12	External Jury	200
Total Periods/Week	12	Total Marks	400

Objective: To enable the students to understand the socio-economic and political context along with the land-use dynamics of the study area in relation to the village and the city. The focus of this studio will be to develop the students' skills in area appreciation and mapping techniques.

Area appreciation studies at the village, neighbourhood and sub-city levels to gain exposure on the socio-economic, spatio-cultural, environmental characteristics and related issues. The emphasis would be on the preparation of plan through comprehensive surveys, observation studies, interviews and analysis. The end goal would be to plan for rational physical and socio-economic interventions for sustainable and harmonious development of the future.

Literature and Documentary Review (Two weeks): Search and review of relevant literature.

Village Planning (Two weeks): Preparation of plans for the identified village/s by studying the physical, socio-economic, environmental and governance aspects. Understanding how development impacts villages and the communities. Appreciating the need for balancing development with sustaining the livelihoods of rural communities and draw plans for suggested interventions for the community.

Neighbourhood Planning (Ten weeks): Preparation of neighbourhood plan considering different user groups. This may also involve the preparation of residential / site plans (low and high density) preferably for areas where new developments are coming up.

Area Appreciation at the sub-city level (Two weeks): Understanding the linkages between different aspects of socio-economic life in relation to the land-use in the cities. Preparation of area profiles in the city, such as residential, commercial, recreational, industrial, slum area and institutional area. Studying impact of landuse, economic and socio-cultural activities on the physical environment of the area.

Students need to understand the need for a balanced development with incorporation of elements like sustainability, livelihood, environmental protection, inclusive growth and institutional engagement. In addition, emphasis will be given for enhancing the communication skills of the students.

Suggested Readings:

1. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
2. Manitoba Intergovernmental Affairs and City of Winnipeg's Planning, Property and Development, Department of Planning and Land Use Division (2002), *A Guide for Developing Neighbourhood Plan*.
3. R.Thomas Russ (2009), *Site Planning and Design Handbook*. Mcgraw Hill Publications.
4. Singh.K (2009), *Rural Development Principles, Policies and Management.* Sage Publications, Pvt. Ltd, New Delhi.

Second Semester

MPUR202 Applications of Geo-Informatics

Number of Credits	3	Subject Category	Lab
Lecture Periods/Week	0	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	3	External Jury	50
Total Periods/Week	3	Total Marks	100

Objective: To equip with the concepts of geo-informatics and computing skills in the relevant software, associated scientific tools, and their relevance and applicability in urban and regional planning.

Unit 1: Introduction to Geo-Informatics

Definitions – Geoinformatics, Remote Sensing, Geographic Information Systems (GIS), Spatial Data Infrastructure; the concept of earth surface projections and geoids; limitations of DBMS, engineering drawings and CADD packages – the need for GIS, Spatial and non-spatial data, raster and vector data, spatial thematic models.

Unit 2: Remote Sensing

Remote Sensing (RS) - Types of RS: passive and active, electromagnetic spectrum; platforms – space, air and ground; data capturing concepts (multi return concepts), digital images – satellite and aerial photography, resolutions, geo-referencing, projections, image processing-enhancement, rectification, transformation; image classification and analysis, digital elevation models, photogrammetric methods-integration, application, stereo data analysis, stereoscopy and triangulation.

Unit 3: Geographic Information Systems

Components of a GIS; spatial and attribute data- input and output; spatial data entry- data structure for GIS, vector data structures; Coordinate systems; Geodetic data - point positioning, problems, measurements, spatial analysis using lab modules, etc.; Relevant Spatial analysis software, Data creation and query; Map preparation – Geo-referencing, digitization, scales, layers, layout, topology creation, spatial data analysis - buffer, overlay, 3D analysis and modeling; Emerging and advanced technology - web-enabled GIS, GPS tracking and monitoring, model builder, transparency through GIS, community participation through GIS, monitoring and management, mobile geo-spatial data collection, aerial mobile mapping, emergency response planning.

Unit 4: Concepts of Spatial Data Infrastructure (SDI)

Framework of geo-spatial data, Interactively connected users and tools, Agreements on geo-spatial standards, Policies to facilitate access to geo-spatial data by users, Institutional arrangements, Use of SDI to communicate spatial data, issues, guidance and services for urban and regional planning.

Unit 5: Applications in Urban and Regional Planning

Preparation of base map, land use maps, utility and infrastructure maps, area delineation, cadastral maps, etc.; Area delineation, inventory preparation of classes; Condition assessment of specific areas, Quantitative measurement of landscape surfaces; Vulnerability mapping and Monitoring.

Suggested Readings:

1. Anil K.Jamwal (2008), *Remote Sensing and GIS*, Jnanada Prakashan, Delhi.
2. Cambell, J.B. (2002), *Introduction to Remote Sensing*, Taylor & Francis, London.
3. Jan Van Sickle (2010), *Basic GIS Coordinates*, Second Edition, CRC Press; 2 Edition, NY.
4. Richards, J.A. and Xia, X. (2006), *Remote Sensing Digital Image Analysis*: An Introduction, Birkhauser, London.

MPUR203 City and Metropolitan Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To aware of the aspects such as urban growth, systems, linkages between city and region, problems and issues of metro and mega cities and planning for the metropolitan areas.

Unit 1: Introduction

Concept and approaches to metropolitan planning; Theorizing the city- Chicago school, Postmodern school, Post structuralist school; Critical urban theory

Unit 2: Metropolitan Areas

Delineation techniques of metropolitan areas; Primate city; Metro and mega cities-issues, processes and trend; urban culture.

Unit 3: Urban Sprawl

Urban sprawl and suburbanization; Core-periphery; Transit oriented development; Global city and City regions; urban and rural transformation, urban rural continuum; urban sprawl projections.

Unit 4: Urban Economy

Urban economies; City as growth engine; Economic restructuring: The Post 1973 World; Neo-liberal cities; Gentrification and the Revanchist City; Public space and right to the city.

Unit 5: Governance

Collaborative governance in cities; Decentralization and Metropolitan Planning Committees, Indian policies (73rd and 74th Constitutional Amendments) and programs related to metropolitan planning; inter-sectorality.

Suggested Readings:

1. Brenner, Neil; Marcuse, Peter; Mayer, Margit, (2011), *Cities for People, Not for Profit: Critical Urban Theory and the Right to the City*, Routledge, NY.
2. Bruegmann, Robert (2005), Sprawl- *A Compact History,* University of Chicago Press Books.
3. Harvey David (1973), *Social Justice and the City*, Baltimore, Johns Hopkins University Press.
4. Sassen Saskia (2012), *Cities in a World Economy*, 4th ed. Thousand Oaks, CA: Pine Forge Press. London.

MPUR204 Land Economics and Management

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide students with an overview of the land economics to spatial planning and issues.

Unit 1: Land as a Resource

Land as natural, economic, finite and productive resource; Concern for land; Concepts of land resource management.

Unit 2: Land Value Capture

Changing land values in urbanized and urbanizing areas; Land value capture taxes; Land markets – legal and illegal in the core and fringe areas of metropolitan cities; Property markets.

Unit 3: Land as a Fiscal Tool

Transit oriented development and town planning schemes; Concepts of land rent, welfare economics, principles, land values, rents, development charges, betterment fees, property taxation and market mechanisms which influence/regulate the urban land use.

Unit 4: Valuation of Property & Development Charges

Valuation of property – Principles and practices; Private ownership and social control of land; Disposal of land, land development charges and betterment levy; Land use regulation, compensation and requisition taxation of capital gain on land versus public ownerships, economic aspects of land policies at various level of decision making.

Unit 5: Cost Benefit Analysis & Case Study

Process - Cost / benefit elements, Discount rate, net present value, sensitivity analysis, valuation, risk and uncertainty.

Suggested Readings:

1. Government of India (2009), *Guidelines for Valuation of Immovable Properties*, Directorate of Income- Tax, Ministry of Finance Tax (PR, PP & OL) Mayur Bhawan, New Delhi.
2. Government of India (2007), *Model Guidelines for Urban Land Policy*, Town and Country Planning Organisation ,New Delhi.
3. Shirley Ballaney and Bimal Patel, (2009), *Using the 'Development Plan – Town Planning Scheme, Mechanism to Appropriate Land and Build Urban Infrastructure*, India Infrastructure Report, 3iNetwork, IDFC, Oxford University Press, New Delhi.
4. Vidyadhar K. Phatak (2013), *Land Based Fiscal Tools and Practices for Generating Additional Financial Resources*, Ministry of Urban Development, GOI & the World Bank. http://jnnurm.nic.in/wp-content/uploads/2014/09/Final-Report-LBFT_28Aug2014.pdf.

MPUR205 Advanced Infrastructure Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To expose students to several dimensions of infrastructure and to give a brief idea on existing policies and programmes. To sensitize students to various schemes and programmes related to infrastructure development as a component for inclusive development.

Unit 1: Introduction, Basic Concepts and Theories

Role of physical planner in planning of utilities and services; objectives of utilities and services planning and implications for public health and environmental protection; urban water cycle; flood frequencies, flood protection.

Unit 2: Water and Waste Water

Water supply distribution system, Source of water supply, Quantity & quality, transmission and distribution, treatment methods, treatment plan location; Planning and layouts of distribution system, concept of rain water harvesting and its need at community level. Concepts, characteristics of waste water, Industrial effluents and their effects, waste water treatment methods, planning and location of treatment plants, decentralized waste water treatment, low cost sanitation, Storm water drains, Zero discharge systems, Service level benchmarks (SLB).

Unit 3: Solid Waste Management

Elements of solid waste management; Solid waste management for Indian cities, issues and data base; collection and transportation, disposal of solid waste, land filling and composting, pre and post treatment; Best practices and technologies in waste management; MSWM rules 2000, environment policy 2006.

Unit 4: Urban Energy Systems

Systems and hierarchy, Communication networks, Macro versus micro grid, Renewable sources of energy in India, Energy policy; National missions - Solar and enhanced energy efficiency.

Unit 5: Traffic and Transportation and Regional infrastructure

Urban Transport planning process and issues, Public Private Partnerships, Appraisal of CTTS, Master Plans, Planning for infrastructure facilities, Parking, Non-Motorised Mobility Policy; Introduction to regional infrastructure and types, significance to economic development, Approaches for regional infrastructure, City, regional integrated planning approach, Institutional Mechanism, Key planning issues in regional infrastructure; Planning guidelines and norms within facility zones.

Suggested Readings:

1. Anisfeld, Shimon C.Anisfeld (2010), *Water Resources,* Island Press.
2. G. Brown and Jeremy J. Schmidt (2010), *Water Ethics: Foundational Readings for Students and Professionals,* Peter Island Press.
3. Peter Droege (2008), *Urban Energy Transition,* Elsevier publishers, Australia.
4. Tan Yigitcanlar (2010), *Sustainable Urban and Regional Infrastructure Development: Technologies, Applications and Management,* Queens University of Technology, IGI Global Disseminator of Knowledge, Australia.

MPUR206 Urban and Regional Governance

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: The course discusses the evolution of governance arrangements, in the context of urbanization trends in India; producing equitable, inclusive, and sustainable urban environments. Emphasis is on comprehending Indian Constitutional foundation of urban local bodies as democratic institutions, and not merely as providers of urban services within the prevailing institutional dimension of Urban Politics.

Unit 1: Government versus Governance

Definition, concepts and types – Indian government – Administration and Political boundaries of India - Features of the constitution of India – Democracy and Government – Electoral system and Formation of Government – Pattern of Government in India and other countries

Unit 2: National and Local Government

Central–State–Local government relations and Controls – Pre-Independent and Post-Independence government system in India – Theories and methods of Administration system – 74 CCA GOI – Municipal Acts and structure of Local government – Municipal Election – City mayor and commissioner based governance system.

Unit 3: Governance: Urban and Regional Perspectives

Urban government and urban systems – Administration set up – Institutional arrangement of urban local government – Urban development management and UN Habitat initiatives – Municipal infrastructure development and service delivery system of water, health, sanitation, security and poverty reduction - Urban disaster preparedness and management; Panchayati Raj, governance at rural levels.

Unit 4: Municipal Governance and Public Participation

History, evolution of centralization versus decentralization of governments - Government reforms – Lessons from JNNURM, Demography and participating democracy, citizen participation and participatory governance – organization, types, structure, function, communication and organizational climate – Information communication system and local government – role of people in local government decision making process. Network Governance and Multi-stake holders Governance.

Unit 5: Governance and e-Governance

Meaning and form of e- Governance at national and international experiences in rural and urban areas – organization change and staffing, technology and law related to e- Governance – municipal websites and e-Governance system, e-service and e-participation, e-Readiness of local government, e-business versus e-Governance –role of internet and mobile technology in e-Governance, e-Governance for smart cites in India and abroad.

Suggested Readings:

1. Basu, Durga Das (2013), *Introduction to the Constitution of India*, Lexis Nexis Butterworths Wadhwa Nagpur, India.
2. Government of India, *JNNURM, Implementation of 74th Amendment and Integration of City Planning and Delivery Functions*, *State Level Reform*. Ministry of Urban Development http://jnnurm.nic.in/wp-content/uploads/2011/01/Mandatory_Primer_1-2-Implementation_CAA_Planning.pdf
3. Mathias Finger and Sultana (Eds.) (2012), *e-Governance a Global Journey*, Global Publications. London.
4. Mohamed Abdul Razak (2011), *e-Governance Vs. e-Readiness in Urban Municipal Governments in Tamil Nadu, India*. In Piaggeri, Americas, Sand & Castelnovo (Eds.), *Global Strategy and Practice of e-Governance, Examples around the World*, Global Publications, London.

MPUR201 Urban Planning Studio

Number of Credits	12	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	200
Practicals /Lab/Workshop Periods/Week	12	External Jury	200
Total Periods/Week	12	Total Marks	400

Objective: This studio provides exposure to urban planning and enables students to understand the context, urban complexities, situations and emerging issues.

The studio focuses on the urban areas, which includes urban areas of different scales ranging from small towns to metropolitan cities. The exercise enables students to comprehend the issues related to the identified urban areas, undertake relevant literature review, conduct field studies, analyse and propose interventions. These may include the preparation of sustainable development plans, sector specific plans and formulation of strategies.

Suggested Readings:

1. Dutsche Gesellschaft fur Internationale Zusammenarbeit (2012), *Land use Planning; Concepts, Tools and Applications*. BMZ, Federal. Ministry for Economic Co-operation and Development, Germany.
2. Eisner Simon (1968), *Concepts for Preparation of Landuse Plan for Planning Units*, Simon Eisner and Associates Publications, California.
3. Government of India (2011), *Report of the Working Group on Urban Strategic Planning Steering Committee on Urban Development and Management*. Ministry of Housing and Urban Poverty Alleviation ,New Delhi.
4. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Ministry of Urban Development, Town and Country Planning Organisation, New Delhi.

MPUR211 Inclusive Planning (Elective – 1)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide exposure to the emerging concepts and issues concerning inclusive community approaches in planning. To equip the students with required knowledge, know-how & tools on people-centric related approaches towards planning. To include the disadvantaged, marginalized and other vulnerable sections/groups into the main stream of planning.

Unit 1: Elements of Inclusivity

Definition, concepts, elements of inclusivity; Exclusion and related issues, disparities, social fragmentation, existing divisiveness; Marginalization, exclusion and access to services,

Unit 2: Community Planning

Definition, concepts and methods; community participation and management; language and discourse in planning, interactive planning, multi-directional flows in decision-making, communicative rationality and democratic processes, building consensus in planning

Unit 3: Poverty, Informal Sector & Inequality

Definition, dimensions, deprivation, measurement, defining parameters; absolute and relative poverty; Informal Sector – Definition and dimensions; migratory impulses and their association with growth of informal sector; Role of informal sector in housing; Housing and basic needs - lack of essential infrastructure; poor condition of existing services;

Unit 4: Disparities and Equal Opportunities

Critique of neo-liberalism; power and hegemony; forms of marginalization; right to the city approach**;** feminist planning theory; Caste and religion –planning and designing for the differently-able persons, elderly, children, and pregnant women;

Unit 5: Policies Programs, Model related to Inclusive planning

Planning legislation and related programmes; Management for the vulnerable sections; Formal institutions of inclusion and community; Role of central and state governments; Private and voluntary organizations; Development indicators; People-centric and participatory planning; bottom-up approaches; Incremental approach; Low cost alternatives and institutional reforms approach; Public-private partnership; PRA techniques and participatory GIS;

Suggested Readings:

1. Ali Sabir (2006), *Dimensions of Urban Poverty*, Rawat Publications, New Delhi.
2. Brown A and Kristiansen A. (2009), *Urban Policies and the Right to the City: Rights, Responsibilities and Citizenship*; UNESCO, UN-Habitat Publication.
3. Kundu, Amitabh and Sharma, Alakh N (2001), *Informal Sector in India: Perspectives and Policies, Institute for Human Development & Institute of Applied Manpower Research*, New Delhi.
4. Singh R.U., Thakur A.K. (2009), *Inclusive Growth In India*, Deep & Deep Publications Pvt. Ltd., New Delhi.

MPUR212 Demography and Planning (Elective – 2)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To enhance the understanding of the students on the population dynamics and analyse the demographic demography data and information.

Unit 1: Demography

Definition, Scope and limitation; population size, composition and distribution; Demography and planning, urban and rural Demography; social demography; demographic factors for spatial planning.

Unit 2: Demographic Theories

Traditional and modern theories of population, population dynamics, population transition, population and migration, fertility, mortality and migration; Age, gender and planning.

Unit 3: Demographic Methods

Data sources & limitations, crude and specific rates, methods of standardization, methods of data collection – principles in design of questionnaires, principles of sampling, types of sampling, sampling of population and area, sources of error, sample size.

Unit 4: Demographic Patterns, Policy and Development

Population patters in India and the World; Distribution & structure of population, Population change causes & implications, demographic characteristics of population and their measures, population growth and development, natural growth and migration of population.

Unit 5: Population Projection & Life Tables

Population projection methods, application contexts, migration analysis, description and construction of life tables.

Suggested Readings:

1. Gupta S.C, (2004), *Fundamentals of Statistics*, Himalaya Publishing House, New Delhi.
2. Morris Hamburg, (1977), *Statistical Analysis for Decision Making*, Harcourt Brace Jovanovich, Inc., New York.
3. Pollard A. H (1981), *Demographic Techniques*, Pergamon Press, Sydney.
4. Richard A. Johnson (2000), *Probability and Statistics for Engineers*, Macmillan Business Books, New Delhi.

MPUR213 Smart Cities (Elective-3)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide exposure to the emerging concepts and issues concerning future and smart cities.

Unit 1: Predecessors to Smart city

City branding initiatives - Sustainable cities, eco-cities, green cities, digital cities, intelligent cities, future cities, global cities and smart cities; Future cities; Smart City discourses developed in the USA, Europe and the Gulf States; application of the main themes of smart cities globally

Unit 2: Smart Cities: Introduction to Concepts

Elements or dimensions of a smart city - smart economy, smart mobility, smart environment, smart people, smart living, and smart governance; smart city capitals; Physical capital, human capital social capital and intellectual capital

Unit 3: Smart City and Society

City and Society: Social Processes as Agents of Change- Living, Working, Mobility, Public facilities, Open data, the role of Information and Communication Technologies (ICTs) in developing smart cities; Smart Energy - smart buildings, smart transport, other related aspects for smart, inclusive and sustainable cities; Criticisms.

Unit 4: The Future of Urban Development and Smart Cities in India

The section focuses upon following latest developments relating to smart cities in India through reports, news paper articles and conferences, budgetary allocations, urban reforms and policies and capacity building proposed in India.

Unit 5 Measuring Smartness

Toolkits, indexes and models developed to measure smartness; European Union smart cities.

Suggested Readings:

1. Deakin, Mark; Al Waer, Husam (Eds.) (2012), *From Intelligent to Smart Cities,* Routledge, Taylor & Francis, USA and Canada.
2. Manuel Pedro Rodríguez-Bolíva (Eds.) (2015), *Transforming City Governments for Successful Smart Cities*, Springer International Publishing Switzerland.
3. Roger L. Kemp, Carl J. Stephani (Eds.) (2013), *Global Models of Urban Planning: Best Practices Outside the United States*, McFarland, USA.
4. Stan Geertman, Joseph Ferreira, Jr., Robert Goodspeed, John Stillwell (Eds.) (2015), *Planning Support Systems and Smart Cities,* Springer International Publishing Switzerland.

MPUR214 Urban Renewal (Elective-4)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide basic conceptual understanding of heritage and conservation issues and to provide exposure to the contemporary conservation approaches.

Unit 1: Appreciation of Indian Art and Architecture

Evolution of Indian art and architecture - idea of shelter and its transformation; Reflections of society in architecture; Paradigm shifts in art history; Deterioration, conservation, preservation and maintenance.

Unit 2: Heritage: Definitions and Theory

Heritage definition and classification; Theoretical approach to heritage; Conservation method and approaches, case studies from world heritage sites and cities; Historical Settlements - Salient features, patterns, historical landscape and restoration of natural and artificial surrounding.

Unit 3: Planning for Conservation

Need for conservation, inclusion and heritage, politics of conservation, participatory heritage planning

Unit 4: Policies and Future Plans

Policies related to conservation, institutional framework for heritage conservation; project planning; Identification of heritage sites, potential sites for conservation; generation of revenue – encouraging tourism, awareness, research and development.

Unit 5: Urban Renewal

Urban renewal as a part of metropolitan plan , techniques of identification of urban renewal areas, Conservation, rehabilitation and redevelopment, management of urban renewal areas, incentive zoning and TDR.

Suggested Readings:

1. Banister Fletcher (1996), *A History of Architecture*, Routledge. U.S.A
2. Mark M. Jarzombek (2013), *Architecture of First Societies: A Global Perspective*, John Wiley Publications. Landon
3. Robert E. Stipe, (Ed.) (2003), *A Richer Heritage: Historic Preservation in the Twenty-First Century*, Chapel Hill: University of North Carolina Press.
4. Rodney Harrison (Ed.) (2009), *Understanding the Politics of Heritage*, Manchester University Press.

Third Semester

MPUR302 Advanced Research Methods

Number of Credits	3	Subject Category	Lab
Lecture Periods/Week	0	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	3	External Jury	50
Total Periods/Week	3	Total Marks	100

Objective: To initiate the planning thesis by enabling students to identify a topic and then develop a proposal and methodology in detail besides providing them with the required theoretical inputs on the syllabus contents.

Unit 1: Introducing Research

What is research? types of research, basics of academic and applied research; Different approaches to research; Research philosophies – positivist and phenomenological philosophies. Introduction to elements of research: epistemology, theoretical perspective, methods, methodology; Justification of choice and use of methods and methodology; Paradigms in research.

Unit 2: Developing Thesis

Research methodology: Quantitative – surveys, experimental, longitudinal, cross-sectional studies; Qualitative – case studies, action research, ethnography, participative enquiry, grounded theory. Content development - Developing contextual background; Research design; Identification of research problem; Research questions; Formulation of hypothesis; Writing aims, objectives, scope and limitations; Review of relevant literature; Identification of suitable research methods/ techniques/ instruments; Data collection – questionnaires, sampling techniques, observation, interviews; Analysis - qualitative and quantitative analysis, data synthesis; Research outcome – research findings.

Unit 3: Research Ethics

Prior permission and intimation, conduct of interview, asking right question, confidentiality, elimination of bias and suspicion; Roles and social responsibilities of the researcher; Time management in research

Unit 4: Field Work Plan

Survey format preparation, study area identification and map preparation; Work plan schedule.

Unit 5: Research Communication

Research vocabulary, Reading – notes taking, material organisation, indexing; Technical writing – content synthesising, paraphrasing, citation and referencing; Academic writing – research proposal / synopsis, abstract writing, report writing and mapping; Presentation: effective oral communication – content structuring, voice modulation, body language, audio-visual aids, handouts.

Suggested Readings:

1. Keith F. Punch (2013), *Introduction to Social research: Qualitative and Quantitative Approache*s. Sage Publications, London
2. Crotty M. (2012), *Introduction: The Research Process, the Foundations of Social Research, Meaning and Perspective in the Research Process*. Sage Publications, New Delhi.
3. Frankfort, Nachmias, C., & Nachmias, D. (2008), *Research Methods in the Social Sciences.*. New York: Worth
4. Neville, Colin (2007), *An Introduction to Research and Research Methods.* Effective Learning Services, School of Management, University of Bradford.

MPUR303 Planning Legislation and Professional Practice

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To make aware of the importance of planning laws, legislations, acts, regulations and professional practices in Planning.

Unit 1: Basic Terminologies

The meaning, significance and objectives of planning legislation; Evolution of planning legislation and over view; Concept of Law; Sources of law; meaning of the term of law, legislation, ordinance, bill act, regulations and bye-laws; doctrine of separation of powers; judiciary, legislature and executive – rule of law – significance of law and its relationship to urban planning.

Unit 2: Legislation Related to Use and Control of Land

Indian Constitution; Introduction to Land Acquisition Act, 1894; betterment charges and compensation provisions in planning laws; Judicial precedents; Legislation controlling use of land, ULCRA; Tools of development control-zoning, sub-division regulations, building regulations, model building byelaws, Government Orders, fire and airport regulations; special regulations like TDR, accommodation Reservation; Rent Control Acts; Apartment Ownership Acts; Contract Act; Transfer of Property Act; The estate duty Act; Easements Act; Slum improvements and clearance Acts; TOD, PPP.

Unit 3: Urban and Regional Planning Acts

Municipal Acts; Improvement Trust Acts; Development Authority Acts; Model town and country planning Acts; legislations relating to urban art commissions; 73rd and 74th Constitutional Amendment Act of India; Co-operative Societies Acts; PIL etc Special Purpose legislations viz; Special Economic Zones (SEZ); Special Investment Region (SIR); National Data Sharing and Accessibility Policy-2012 (NDSAP-2012); Spatial Data Infrastructure (SDI) Act.

Unit 4: Environmental Legislations

Evolution of environmental laws in India; Law of Torts, the first environmental law; National Environmental policy – Pollution control acts – air, water and environmental protection acts; Forest and wildlife act; other important international environmental laws; Hazardous waste management and handling rules / biomedical rules / solid waste management rules; environment tribunal act; archaeological sites and remains of national importance; Conservation of natural resources including mining and forestry acts; MOEF guidelines and notifications.

Unit 5: Professional Practice

Role of Planner; relationship with client, developers, institutions contractors and experts; Role and responsibility of planning consultants, professional ethics, code of conduct and scale of professional charges; Role in interdisciplinary groups; Formulation of project proposal and outlines; consultancy agreements, contracts and inviting tenders; Nature of engagements, agreements and safeguards, completion and copyrights; Aims and objects of the professional institute, sister bodies; the arbitration and conciliation Act; The Indian Contract Act.

Suggested Readings:

1. Campbell, H. and Marshall, R. (1998) *Acting on Principle: Dilemmas in Planning Practice, Planning Practice and Research*, Vol.13, No.2, pp.117-128.
2. Institute of Town Planners, India (1986). *Report of the Task Force on Professional Matters Urban Development and the Town Planner*. ITPI, New Delhi.
3. Kulshreshtha, S.K. (2012) *Urban and Regional Planning in India - A Handbook for Professional Practice*. SAGE Publications India Private limited, New Delhi.
4. Madhusudan Apte, Prakash (2013), *Urban Planning & Development an Indian Perspective.* https://books.google.co.in/books?id=4Z_4g5Dd8RkC&printsec=frontcover#v=onepage&q&f=false

MPUR304 Rural Planning and Development

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide exposure to the concepts, initiatives, systems and trends of rural planning and development.

Unit 1: Introduction

Concepts - village as an organic entity- physical, social, economic, administrative structure of village. Land use in rural areas- cultivated land, waste land, habitable areas. Social, economic and ecological constraints for rural development. Indian rural society, caste, class and gender structures.

Unit 2: Rural Settlement Structure and Development

Hierarchy of settlements in rural India, Rural development: concept, hierarchy and nature, approaches. Land reform system, Gramin swaraj, Sarvodaya movement, Five Year Plans and Rural Development; Planning process at National, State, Regional and District levels; Planning, development, implementing and monitoring organizations and agencies; Urban and rural interface – integrated approach and local plans; Development initiatives and their convergence; Special component plan and sub-plan for the weaker; Data base for local planning; Need for decentralized planning; Sustainable rural development and rural transformation.

Unit 3: Rural Institutional Systems: PRIs and Participatory Planning

73rd Constitution (Amendment) Act – XI schedule, Devolution, Decentralization, Process of empowerment and consensus orientation , Panchayati Raj institutions – organizational linkages; Various committee and their suggestion for PRI. District Administration – Evolution of District Administration, structure and functions, accountability of District level development Departments – Role of District Magistrate/District collector vis-à-vis various Departments' hierarchies. District planning and local planning.

Unit 4: Resource Based Rural Development

Agricultural Policy and Food Security, irrigation and Watershed Management, agro-based industries, tourism development: agro and eco-tourism; Climate change and its effects on the rural economy, features of rural-urban migration; Disasters and resilience in rural areas.

Unit 5: Emerging trends: Rural Development

Institutionalization; Resource mapping, resource mobilization including social mobilization; Information Technology and rural planning, marginalized sections and rural planning, rural marketing, rural finance.

Suggested Readings:

1. Dutt.R, Sundaram.KPM (2008), *Indian Economy*, S Chand Publication, New Delhi.
2. Macivier R .M and Page.C (1981), *Society –An Introductory Analysis,* Macmillan Pvt Ltd, India.
3. Moseley, Malcolm J. (2003). *Rural Development: Principles and Practice*; SAGE Publications Pvt. Ltd, London.
4. Singh.K (2009), *Rural Development Principles, Policies and Management*, SAGE Publications Pvt. Ltd., New Delhi.

MPUR305 Project Planning and Management

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To expose to various aspects of project planning, management, implementation, monitoring and appraisal.

Unit 1: Introduction to Project Planning

Introduction to Projects, nature of planning projects, project life cycle, methodology for project identification and formulation; detailed project report, and feasibility studies, pay-back period, internal rate of return (IRR), DCF, net present value (NPV), cost benefit ratio (CBR), financial cost-benefit analysis, economic cost benefit analysis.

Unit 2: Project Formulation and Appraisal

Projects and planning issues including sectoral policy at local, State, and National levels project appraisal; Approaches of appraisal - World Bank and Asian Development Bank methods: technical, financial, social, economic, environmental, institutional approaches, SCBA, UNIDO approaches.

Unit 3: Project Management

Project characteristics, techniques of management, importance of project management; PERT & CPM; new techniques of management by objective (MBO).

Unit 4: Pre-implementation Planning Phase

Work break down structure; network analysis; CPM, PERT; resource levelling and allocation; time-cost trade off aspects.

Unit 5: Project Implementation, Monitoring and Evaluation

Project implementation, stages of implementation; actors in projects implementation; project monitoring; meaning objectives and significance; monitoring techniques; integrated reporting, milestones, time and cost over-run and under runs, unit index techniques; project evaluation; techniques of project evaluation; input analysis, financial cost-benefit analysis, social-cost benefit analysis; Case studies in Urban and Regional planning projects.

Suggested Readings:

1. Albert Lester (2007), *Project Management, Planning and Control*, Butterworth Heinemann Publishing House, United Kingdom.
2. Harold R. Kerzner (2013), *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*, John Wiley & Sons, New Delhi.
3. Jose Maria Delos Santos (2013), *Project Management Absolute Beginner's Guide – A Book Review*, QUE Publishing house, New Jersey.
4. Ramakrishna K (2010), *Essentials of Project Management,* PHI Publishing house, New Delhi.

MPUR306 Disaster Preparedness and Management

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide an overview to disasters, critical understanding of the processes and stakeholder roles involved in reducing the impact of disasters on settlements. To enable the students to understand the fundamental theories behind disaster management and also to relate the same in the context of spatial planning practices.

Unit 1: Calamities and Disasters – Introduction

Concepts, and definitions of disaster, hazard, calamity, risk, vulnerability, resilience and adaptation; Types of Disasters - urban disasters, pandemics, complex emergency situations; Types of impacts - in terms of special groups, castes, class, gender, age, location, disability; Global trends in disasters; Disasters and biodiversity loss; socio economic aspects of disasters.

Unit 2: Cycle of Disaster Management

Stages of Disaster; Immediate Response, Rescue and Relief; Common Issues with Reconstruction and Rehabilitation; Safety, prevention, and preparedness measures; Mitigation measures, structural and non-structural measures; Role of different agencies in disaster management - Government, INGOs, NGOs and CBOs, role of economy, ecology and social networks in determining resilience.

Unit 3: Risk, Vulnerability and Coping Methods – Disasters in the Context of Development

Understanding Risk through Livelihoods Analysis; Factors affecting Vulnerabilities; Differential Impacts of disasters; Ability to recover, coping methods, alternative adjustment processes; Relevance of indigenous knowledge, appropriate technology and local resources; Hazard and vulnerability profile of India; Disasters in the context of development projects, Landuse change and adaptation to Climate Change,

Unit 4: Role of SDI and Communities in Disaster Management

Information and data in the context of emergency situations: Role of geospatial tools in the field of disaster management; Community and disasters.

Unit 5: Planning for Disaster Management

Steps for formulating a disaster risk reduction plan; Preparation of state and district disaster management plans; DM Act and Policy, Relevant policies, plans, programmes and legislation: Master plans, disaster preparedness and post disaster management.

Suggested Readings:

1. Abarquez I. & Murshed Z (2004), *Community Based Disaster Risk Management: Field Practitioner's Handbook*. ADPC, Bangkok.
2. Alexander D. (2000), *Introduction in 'Confronting Catastrophe',* Oxford University Press, London.
3. Government of India (2005), *Disaster Management Act 2005*, New Delhi.
4. Government of India (2004), *National Disaster Response Plan (NDRP Report),* Ministry of Home Affairs, New Delhi.

MPUR301 Regional Planning Studio

Number of Credits	12	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	200
Practicals /Lab/Workshop Periods/Week	12	External Jury	200
Total Periods/Week	12	Total Marks	400

Objective: This studio intends to facilitate students with the required knowledge and skills and preparing a regional plan, so as to achieve sustainable and harmonious development in the future; through a comprehensive understanding of its setting, context, linkages, legal frameworks and hierarchy.

The studio focuses on the regional planning, which deals with different components, scales, contexts of regions such as metro region, resource region, special region and district planning. The exercise enables students to comprehend the issues related to the identified regions, their links with higher and lower order plans. It involves a comprehensive review of relevant literature, policies, frameworks, field studies, documentation, analysis and proposed interventions. These may include the preparation of sustainable regional plans, and formulation of strategies.

Suggested Readings:

1. Dewin G. Flittie (1970), The *Delineation of a Region-an Alternative Technique, Journal of Growth and Change*, Wiley Online Publications, Vol. 1, No.1, pages 34-38.
2. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
3. Misra R.P (2002), *Regional Planning: Concepts, Techniques, Policies and Case Studies*, Concept Publishing Company, New Delhi.
4. Yupo Chan (2011), *Locational Theory and Decision Analysis-Analytics of Spatial Information Technology*, Springer Publications, Berlin.

MPUR311 Future Settlements (Elective-1)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To make students aware and expose to changing scenario in the spatial order of cities and regions as well as the emergence of virtual societies in the World. Also to enable the students to understand the use and power of emerging new technologies and social networks among communities across the city, country and globe demand for paradigm shift in the spatial planning outlook and governance edge.

Unit 1: Planning and Technology

Traditional settlements to modernity, spatial planning and technology interface, socio-economic planning and technology interface, planning cities and local technologies, technological innovations and responsive city planning, planning responsive technology versus technology responsive planning.

Unit 2: Cities-Technology-Infrastructure

Transportation and technology, water, sanitation and technology, energy efficient technology for home, street, neighbourhoods and city, telecommunication, health and education, security and safety for buildings and people in cities.

Unit 3: Techno Cities

Digital cities, virtual cities, technology parks, smart planning and infill development; Planning, design and communication system, socio-economic and environmental impact of Techno Cities.

Unit 4: Governance

Role of law and technology, administration and organization, industry and corporate, communities and people in building smart cities and smart communities, participatory planning.

Unit 5: Case Studies

Best Practices in India and around the world.

Suggested Readings:

1. Brkovic, M. B. (2004), *Planning in the Information Age: Opportunities and Challenges of E-Planning*, CORP.
2. Intelligent Community Forum (2012), *Innovation and Employment in the Intelligent Community*, Intelligent Community Forum, pp1-35.
3. Komakech, D. (2005), *Achieving More Intelligent Cities*, Municipal Engineer, pp259-264.
4. Nohrstedt, (2002), *Digital Planning: Integrating New Information and Communication Technologies in Urban Planning.* www.oruse.com

MPUR312 Special Area Planning (Elective-2)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To equip the students with the knowledge of addressing issues of urgent concern. The syllabus focuses on preparation of special area plan with an emphasis on the coastal / port areas.

Unit 1: Introduction

Concepts and components of special area planning; Composition of land uses of special area plan versus conventional land use theories; The practice related to the activities of government, N.G.O and related to local area planning.

Unit 2: Urbanization and Growth

Urbanisation trends, development and redevelopment activities; illustrative framework to guide and regulate the development fostering economic growth; growth factors and compatible land uses; Corridor development, industrial, coastal corridors

Unit 3: Special Area Plans

Key challenges, design considerations, site characteristics and functionality of a space which become base/guide for site planning and land use regulations and development control rules; Hill area plans, Corridor plans, Special investment region and special economic zones, coastal area planning, Port area planning and logistic hubs.

Unit 4: Policies

Land use plans and development control regulations to ensure comprehensive development; Improving the quality of life and socio-economic growth of a specified area; Changes in the policies, land use regulations and emergence of growth factors result in significant change in the land use and growth patterns.

Unit 5: Case Studies

Socio-economic-environmental, profile–multiple agencies and complex boundaries; review of development projects and its socio-economic-environmental impacts; Coastal area/port cities, planning and governance; healthy urban planning and healthy cities.

Suggested Readings:

1. Kulshreshtha, S.K. (2012) *Urban and Regional Planning in India - A Handbook for Professional Practice*. SAGE Publications India Private limited, New Delhi.
2. Mookkiah Soundarapandia (Ed.) (2012), Development of Special Economic Zones in India: Impact and Implications, Vol.2, Concept Publishing Company Pvt. Ltd., New Delhi.
3. Municipal Corporation of Delhi (2011), *Redevelopment Plan/ Scheme of Special Area*. New Delhi. mcdonline.gov.in/townplan/.../Final%20Special%20Area%20Report.pdf
4. Robert Kay Jaqueline Alder (2005), *Coastal Planning and Management,* Taylor and Francis Publications.

MPUR313 Human Settlements and Climate Change (Elective-3)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide knowledge on human settlements in climate change perspective and understand strategies for adaptation and spatial planning tools for mitigation of GHG emissions.

Unit 1: Introduction to Climate Change

Concern, human settlements as a major source of emissions, vulnerability to impacts of climate change, emission paths, strategies, location of settlements, socio-economic characteristics, cultural practices and governance structure, suitable interventions; Extreme weather events, ozone depletion; Energy consumptions.

Unit 2: Climate Risk and Vulnerability in the City

Risk due to climate change, risk assessment, impacts due to flooding, cyclones and landslides, impacts on infrastructure, urban governance and participation; Resilience in cities.

Unit 3: Urban GHG Emissions

Sectoral emission – residential, industrial, transport, waste disposal, reducing emissions and urban carbon footprints, carbon trading and other alternatives.

Unit 4: Climate Change Mitigation and Low-Carbon Cities

Energy efficient approaches, Urban climate governance, transportation and energy systems for the future, land-use planning and compact cities, future and smart cities, reducing the urban heat islands, protecting urban water systems from climate change risks.

Unit 5: Adaptation – Towards Climate Resilient Cities

Climate change adaptation, migration as adaptation, climate change experiments and alternatives, Climate change, vulnerable regions and groups - tropics, farmers, gender, children, poor and migrants.

Suggested Readings:

1. Harriet Bulkeley (2013), *Cities and Climate Change*, *(Routledge Critical Introductions to Urbanism and the City),* Routledge, New York.
2. Lehmann S (2015), *Low Carbon Cities- Transforming Urban Systems*, Routledge Publications, New York.
3. Nikolas Bader and Raimund Bleischwitz (2009) *Measuring Urban Greenhouse Gas Emissions: The Challenge of Comparability, Cities and Climate Change,* Vol. 2 (3).
4. P.Neeraj et al (2008), *Climate Resilient Cities: A Primer on Reducing Vulnerabilities to Disasters*, World Bank Publications.

MPUR314 Tourism Planning and Development (Elective-4)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide exposure to students on the concepts, planning, development issues related to tourism planning and development, and also to equip them with required knowledge on policies and programmes concerned to tourism development.

Unit 1: Introduction to Tourism

Definitions, scope, nature, types, key determinants, characteristics of tourism; tourism hubs; tourism as a industry; growth of tourism in developed and developing world; problems and issues of tourism;. Sociology of Tourism – leisure, recreation, travel and tourism; gender and tourism development.

Unit 2: Tourism Sector – Impacts

Relationship between Tourism and Urban Development; Tourism and environment; Tourism multiplier and forecasting methods; capacity building and carrying capacity; planning for tourism projects; Tourism and cultural and social aspects; Eco-tourism and local social and economic development.

Unit 3: Planning for Tourism

Tourism Plans- plan components; social and spatial planning of origin–transit-destination planning; Role of multiple Government authorities and agencies involved in tourism development; Role of private sector in tourism development; Tourism circuits – planning and development of regions.

Unit 4: Tourism Infrastructure

Need for infrastructure support planning such as accommodation transportation, water supply, solid waste disposal, health, safety and information system; Tourist guides, interpretation and signages; Impact on local life style; Revenue streams and resource; Package tourism and pricing; Tourism and hospitality.

Unit 5: Tourism Policies and programs

Tourism policies at state and national levels; Government and community interventions to develop tourism sector; e-governance and tourism development.

Suggested Readings:

1. Clare A. Gunn, (1993), *Tourism Planning: Basics, Concepts, Cases*, Taylor & Francis Group, London
2. David L. Edgell Sr., (2006), *Managing Sustainable Tourism: A Legacy for the Future*, Haworth Press.
3. James Mark, (2003), *Tourism and Economy*, Versa Press, London.
4. Martha Honey, (1998), *Ecotourism and Sustainable Development: Who Owns Paradise?* Island Press.

Fourth Semester

MPUR402 Development Finance

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To expose students to the various concepts, mechanism and role of development finance and its relevance with various hierarchy of government system.

Unit 1: Overview of Development Finance

Concept of development finance, Approaches, Development administration at National, State and Local level and the process of formulation, implementation and management, Structure of implementing authorities: Improvement trusts, Development authorities, Metropolitan Development Authorities and their relationship with local governments. Financial institution: concept, typology and their role.

Unit 2: Municipal Finance Institutions

Finance Commissions, fiscal agenda of development schemes and Sources of revenues; equities; loans; debt financing; Pooled finance development fund, national urban infrastructure fund, municipal bonds, miscellaneous sources.

Unit 3: Financial Management & Resources

Structure of finances, fiscal problems and issues of financial management, credit rating, Implications of 74th Amendment for municipal finance, expenditure pattern, bilateral and multi lateral lending intuitions mobilizing resources for a project - financial resources, land resources, project resources, and other resources.

Unit 4: Investment Planning

Link with spatial plans, process, components, investment needs, budgeting, financial investments in infrastructure and services.

Unit 5: Financing Mechanism

Financing of urban development, infrastructure and services – mechanisms and instruments, subsidy reduction, cost recovery, public private partnerships; Micro finance, Financial appraisal, investment appraisal; Financial risk – sources, measures and perspectives on risk, sensitivity analysis, property tax administration, rent control system.

Suggested Readings:

1. A. Richard, Richard Hemming and H.Barry (2013), *The International Handbook of Public Financial Management Centre for Aid and Public Expenditure*.
2. Allen .F, Yago. G (2013), *Financing the Future, Market-Based Innovations for Growth*, Pearson Publications.
3. Gupta J. (2008), *Privatisation of Municipal Finance in India*, Atlantic Publishers and Distributors.
4. Stephen Spratt (2008), *Development Finance: Debates, Dogmas and New Directions* , Routledge Publications.

MPUR403 Planning and Politics

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide political economic perspective of planning special context to the cities of world and also to equip students on theorizing cities through the lens of politics. The course will focus more on case studies across the world.

Unit 1: Introduction

Basic concepts; Structural Adjustment and cities; Contested cities.

Unit 2: Politics and Society

Postmodern Urbanism; Critical urban theory; Civil Society and Political society; Collaborative governance and citizen participation.

Unit 3: Spatial Politics

Spatial politics: Politics of public space; Politics of environment.

Unit 4: Political Movements

Terrorism and surveillance, Politics of radical movements, Social movements; Case studies from: Chipko movement, Narmada movement, wall street protest, Cochabamba water riot.

Unit 5: Politics and Policy

Urban policy and the politics of spatial and temporal scale; Power and urban hegemony; Capacity and social capital, Politics of scale and networks of association in public participation GIS; Mega projects and politics of city development.

Suggested Readings:

1. Ghose, Rina (2005), *The Complexities of Citizen Participation through Collaborative Governance*. *Space and Polity*, 9(1): 61-75.
2. Harvey David (2012), *Rebel Cities*; Verso Books, London.
3. Smith, Neil (2002), *New Globalism, New Urbanism: Gentrification as Global Urban Strategy*, Oxford University Press, New York.
4. Thompson L and Tapscott C (Ed.) (2010), Citizenship *and Social Movements- Perspectives from the Global South; Zen Books*, London.

MPUR401 Planning Thesis

Number of Credits	24	Subject Category	Thesis
Lecture Periods/Week	0	Internal Assessment	400
Practicals /Lab/Workshop Periods/Week	24	External Jury	400
Total Periods/Week	24	Total Marks	800

Objective: To enable the students to undertake original and independent study / research in the form of terminal thesis / project on a topic of their choice approved in the previous semester.

Each student shall prepare thesis on a topic approved by the department under the guidance of the allotted supervisor. The thesis will provide an opportunity to the student to synthesise and apply the knowledge and skills acquired through the learning of various theories and practices during the course.

The students are expected to work in various stages. Each student shall be required to present the work in the format as suggested by the department i.e., orally, graphically, written, etc. The thesis shall be monitored continuously and periodically through internal marked reviews to check the consistency of work, the relevance of the analysis with respect to the data collected and project scope, and the progress towards logical proposals. Each stage shall be evaluated by a panel. These stages may broadly be outlined as:

Unit 1: Thesis Proposal

Unit 2: Development of Suitable Methodology / Framework

Unit 3: Literature Search and Review

Unit 4: Data Collection, Analysis and Synthesis

Unit 5: Findings / Proposals

The final output shall be in the form of a draft report, which once approved by the department will be followed by the submission of a detailed report and drawing/visuals for external jury members, in a given format. The thesis shall also be presented orally in external jury by each student in the form of visuals / drawings as necessary for each topic.

Suggested Readings:

1. Elizabeth A. Wentz (2013), *How to Design, Write, and Present a Successful Dissertation Proposal*, Sage Publications.
2. John Biggam (2015), *Succeeding with Your Master's Dissertation: A Step-By-Step Handbook*, Open University Press, McGraw Hill Education, UK.
3. Murray, Rowena (2011), *How To Write A Thesis*, Open University Press, McGraw Hill Education, UK.
4. Tayie, Sami (2005), *Research Methods and Writing Research Proposals,* Pathways to Higher Education, Cairo.