M.PLAN
(URBAN PLANNING)

Course Structure for M.Plan .(Urban Planning) Programme (First and Second Year)

FIRST YEAR					
First Semester					
S.No.	**Code**	**Subject**	**(L-S-P)**	**Credit**	**Category**
1	MUP101	Planning Studio	0-0-8	4	DCC
2	MUP 103	Housing & Environmental Planning	2-0-0	2	DCC
3	MUP 105	Planning Techniques	2-0-0	2	DCC
4	MUP 107	Infrastructure and Mobility Planning	2-0-0	2	DCC
5	MUP 109	Planning History & Theories	2-0-0	2	DCC
6	MUP 111	Women and Habitat	2-0-0	2	HMC
7	MUP 113	Demographics and Statistical Analysis	0-0-2	1	HMC
8	MUP 115	Urban Informatics and Analytics	0-0-4	2	BSAE
9	GEC 101	Generic Open Elective	0-0-4 2-0-0 0-2-0	2	GEC
			Total	**19**	
Second Semester					
S.No.	**Code**	**Subject**	**(L-S-P)**	**Credit**	**Category**
1	MUP 102	Planning Studio	0-0-8	4	DCC
2	MUP 104	Planning Legislation and Governance	2-0-0	2	HMC
3	MUP 106	Sustainable Development	2-0-0	2	BSAE
4	MUP 108	GIS & Remote Sensing	2-0-0	2	BSAE
5	MUP 110	GIS Lab	0-0-6	3	BSAE
6	MUP 112 MUP 114 MUP 116 *	Departmental Elective Course -1	0-0-4	2	DEC
7	MUP 118 MUP 120 MUP 122 *	Departmental Elective Course -2	0-0-4	2	DEC
			Total	**17**	

NOTE:

1) Students have to undergo Professional Training after completion of second semester, during summer vacations. The same shall be evaluated in semester 3.

SECOND YEAR					
Third Semester [@@]					
S.No.	**Code**	**Subject**	**(L-S-P)**	**Credit**	**Category**
1	MUP 201	Planning for Region - Studio	0-0-8	4	DCC
2	MUP 203	Thesis (Stage – I)	0-4-0	4	DCC
3	MUP 205	Project Planning and Management	2-0-0	2	HMC
4	MUP 207	Urban Economics and Finance	2-0-0	2	HMC
5	MUP 209	Advanced Geoinformatics Lab	0-0-4	2	BSAE
6	MUP 211	Professional Training (Summer)	0-0-0	2	DCC
7	MUP 213 MUP 215 MUP 217 *	Departmental Elective Course -3	0-0-4	2	DEC
8	GEC 201	Generic Open Elective	0-0-4 2-0-0 0-2-0	2	GEC
			Total	**20**	
Fourth Semester					
S.No.	**Code**	**Subject**	**(L-S-P)**	**Credit**	**Category**
1	MUP 202	Thesis (Stage - II)	0-24-0	24	DCC
			Total	**24**	

[@@] Student exchange may be permitted in third semester with other National/International University but the requirement of 19 credits to complete the semester may be fulfilled by the concerned student by obtaining the said credits after completion of studies at University with which the exchange of student has been done by IGDTUW.

Course Code for Generic Open Elective may be decided as per University norms / other programmes

List of Departmental Elective Courses

Category	Course Code	Subject	Credits
Departmental Elective Course-1	MUP 112 MUP 114 MUP 116 *	Advanced Mobility Planning Introduction to Urban Landscape Water Sensitive Urban Development Any Other Elective	0-0-4
Departmental Elective Course-2	MUP 118 MUP 120 MUP 122 *	Urban Heritage Conservation Tourism and Recreation Planning Advanced Informatics Any Other Elective	0-0-4
Departmental Elective Course-3	MUP 213 MUP 215 MUP 217 *	Introduction to Urban Design Disaster Mitigation and Management Resilient Planning Any Other Elective	0-0-4

*** Any other elective(s) may be offered by department (s) of the university and may be taken up by student as per norms of University or Department of Architecture and Planning**

PLANNING STUDIO			
Course Code	**MUP 101**	**Credits**	**04**
Contact Hours (Hrs/Week)	**08**	**Semester**	**01**
Course Category	**DCC**		

INTRODUCTION

The course is introductory in nature and exposes students to all domains of planning and bring them to practice

COURSE OBJECTIVES

The objective of the course is to:

- Bring students of diverse backgrounds to a common platform and develop the essential skills of planning.
- Introduce students to the general concepts of Physical Planning
- Develop skills of data analysis, interpretation and knowledge representation through graphical, theoretical and verbal mediums
- To be able to apply knowledge gained in other courses and to be able to generate comprehensive physical plans

PREREQUISITE NIL

COURSE LEARNING OUTCOMES

Having completed the course, the students would be able to:

1) Develop skills for data analysis (including, collection, storage and segregation)
2) To be able to collate information for future scenario building and represent it in appropriate medium

PEDAGOGY

Classroom teaching is supported by giving handouts, PowerPoint slides. Readings/Short Movies may be shown to students. Students may visit site for collecting context specific data for getting better understanding of real-life project details. Outstation tours, of short/long duration, for studio problems are recommended.

EVALUATION SCHEME:

Course Type			Examination		Relative Weights						
L	**P**	**S**	**TH**	**PR**	**CAT**	**CAP**	**MTET**	**MTEP**	**ETET**	**ETIP**	**ETEP**
0	8	0	--	--	--	35	--	15	0	--	50

CONTENT

S. No	Contents	Contact Hours
1.	**Film Appreciation (individual assignment)** Films related to city development and socio-economic issues will be screened for students. The purpose of these films is to educate the students' understanding of various development issues and to absorb them in the planning practice. At the end of the film, a discourse around the film will also be held. After viewing the films, each student is expected to write about its main focus, city / region context, its applicability to Indian environment by answering the given questions in not more than half a page.	**16**

2.	**Literature Review (individual assignment)** Each student is expected to read the article given from a journal/book and write a summary of not more than a page (250 words only) highlighting the problem, approach, methodology, analysis, how the author arrived at the conclusion and its relevance to Indian context. There will be a negative marking for writing the same text as in the original (that is copying from the original text given to them). • **Simple circulation/flow diagrams for small building projects**	**16**
3.	**Area Appreciation (individual assignment)** The aim of the area appreciation exercise is to enable the students to understand and contextualize the location of the area in relation to the city, zone and area in which the particular place is situated. This is done in relation to the socio-economic, spatial and cultural characteristics of that city, zone, location, etc. The main purpose is to make the students appreciate the locational attributes of land parcels for future development in a city. Due to the size of the area, this exercise is done in groups of students being assigned to a particular area. The following planning issues at area level should be identified: • Review of the Master Plan / Zonal / Area plan in relation to the selected areas. • Appreciation / Analysis of ward level data. • Perception of areas in terms of legal / illegal / authorized / unauthorized, Slums, Urban Aesthetics. Social Categorizations of people - Type of population living, people's perception about area and its planning problems. • Land use including Agriculture land and land use conflicts, extent (%) of broad land use such as commercial, industrial, residential, institutional and recreational. • Extent of formal / informal activities present in the area including their location and conflicts. General land tenure of the area and land value for different uses. • Major types of transport, type of roads, hierarchy of roads, type of transport modes used. Amenities: Location of Social and Physical infrastructure and their problems as perceived by local population. Look for specific infrastructure such as Water supply, drainage (water logging areas), waste collection and disposal system, sanitation, etc. • Environmental Issues: Open Spaces – Availability and extent of open space to built-up area, garbage disposal, encroachment (through photographic evidences and sketches). • Locating the study area in the zone, city and regional context with respect to all the above aspects.	**20**
4.	**Site Planning (individual assignment)** Site planning is a process whereby the optimum utilization of potential of site is considered recognizing the constraints the site has. It uses three-dimensional space of the site and the associated locational advantages, human activities and the regulations that are assigned to a particular site. The site is developed using a set of standards / norms in a given context which varies from location to location. A student is expected to understand the intricacies and interface between various variables such as soil conditions, topography, environmental dimensions, location, spatial standards applicable to the site, etc.	**24**
5.	**City Development Plan (Group assignment)** A City is a multi-dimensional, dynamic and a futuristic space. Understanding city involves appreciating this multi direction and include them in the city making process. A job of physical planner does not merely understand the current conflict in development but to emerge out of this	**36**

	and to come out with a vision for the city. To arrive at this vision, a planner needs to understand the dynamics of various components of the city and how and what level interventions can be made to achieve that vision. A group of students are expected to study a city in terms its present problems and issues and project a futuristic vision in terms of scenario building.	

REFERENCE BOOKS

1. Cities for People; Jan Gehl; Island Press; 2nd None ed. Edition, 2010
2. The Death and Life of Great American Cities; Vintage Books, 1992
3. Urban Planning in India; Amiya Kumar Das; Rawat, 2007
4. Fundamentals of Town Planning; G.K. Hiraskar; Dhanpat Rai Publication,2018
5. Town Planning; Rangwala; Charotar Book Distributors, 2015
6. Delirious New York; Rem Koolhaas; The Monacelli Press, 1997
7. Good City Form; Kevin Lynch; MIT Press, 1984
8. Site Planning; Kevin Lynch and Gary Hack; MIT Press, 1984

HOUSING & ENVIRONMENTAL PLANNING			
Course Code	**MUP 103**	**Credits**	**02**
Contact Hours (Hrs/Week)	**02**	**Semester**	**01**
Course Category	**DCC**		

INTRODUCTION

This course shall create awareness about aspects that affect housing planning and need to plan in accordance with environment within the existing framework.

COURSE OBJECTIVES

The objective of this course is to:

- Enable the students to understand the fundamentals of Housing and Environmental Planning.
- familiarize students with a wide spectrum of aspects related to housing viz., housing scenario, housing needs, housing design, building legislations and relevant methods for formulating housing strategies.
- The objective of this course is to initiate the students to a discreet understanding of the environment and the interactions and inter-relationships of all living organisms with the physical surroundings.

PREREQUISITE NIL

COURSE LEARNING OUTCOMES

Having successfully completed this course, the student will be able to understand:

- Housing as a social issue and as an infrastructure.
- Housing needs and demands
- Implication of statutory norms and market forces on the typology of housing and Planning of housing for a given/explored number of house hold.
- Sensitive Planning for environment
- Understanding of Various Environmental frameworks for Planning

PEDAGOGY

Classroom teaching is supported by giving handouts, PowerPoint slides. Readings/Short Movies may be shown to students. Students may visit site for collecting context specific data for getting better understanding of real- life project details.

EVALUATION SCHEME:

Course Type			Examination		Relative Weights						
L	**P**	**S**	**TH**	**PR**	**CAT**	**CAP**	**MTET**	**MTEP**	**ETET**	**ETIP**	**ETEP**
2	0	0	Yes	--	10	--	30	--	60	--	--

CONTENT

S. No	Contents	Contact Hours
1.	**Unit 1: Concepts and Definitions** • Shelter as a basic requirement, determinants of housing form, Census of India definitions, Introduction to policies, housing need, demand and supply, dilapidation, structural conditions, materials of constructions, housing age, occupancy rate, crowding, housing shortage, income and affordability, poverty and slums, houseless population Various housing typologies viz. traditional houses, plotted development, group housing, multistoried housing, villas, chawls, etc., slums and squatters, night shelters, public health	**07**

	issues related to housing, various theories of housing, concept of green housing	
2.	**Unit 2: Housing as social security** • Housing as a social aspect; Role of housing in development of family and community well-being, ghettoism, gender issues, housing for the elderly. Contribution of housing to micro and macro economy, housing taxation, national budgets, fiscal concessions	**07**
3.	**Unit 3: Planning for Neighborhoods** • Neighborhood living in traditional and contemporary societies, elements of neighborhood structure, Planning and design criteria for modern neighborhoods, housing and area planning standards as per MPD -2021, net residential density and gross residential density; National Housing Policy.	**07**
4.	**Unit 4: Environment and Development** • Changing Perspectives in Man-Environment Relationship with Focus on Issues of Population, Urbanization, Resource Depletion and Pollution. Concept of Ecology; Fundamentals of Ecosystem—Its Structure and Function. Environmental Degradation (Environmental Concerns and Challenges) and Its Impact on Various Ecosystems. Concept of Sustainable Development and EIA.	**07**

REFERENCE BOOKS

1. Housing: Changing Needs and New Directions, V. Gandotra, M. Shukul, N. Jaju and N. Jaiswal, Authors press, 2009
2. Housing and Urbanization- A study of India, Cedric Pugh, Sage Publications, New Delhi, 1990
3. Housing Laws in India- Problems and Remedies, P.K.Sarkar , Eastern Law House Private Ltd., 2000
4. National Housing Policy, GOI, New Delhi
5. Reading Material on Housing, K. Thomas Poulose, ITPI, India
6. Understanding Housing Policy, Brain Lund, The Policy Press, Great Britain, 2017
7. Urban Development and Housing in India- 1947 to 2007, Rishi Muni Dwivedi, New Century Publications, 2007
8. Housing Policies and Related Acts and Schemes of Government of India
9. Master Plan of Delhi 2021.
10. Fundamentals of Ecology, Odum, E.P., Barrett, G.W., Brewer, R., Thomson Brooks, 2004
11. Ecology, Impact Assessment and Environmental Planning, Westman W., John Wiley and Sons, 1985
12. Integrated Environmental Planning, James K. Lein, Blackwell Publishing, 2002
13. AITP Reader on Ecology & Resource Development, AITP
14. AITP Reading Material on Environmental Planning and Design, Prof A. K. Maitra, SPA Delhi
15. Ecology and Equity - The Use and Abuse of Nature in Contemporary India, Gadgil, M. and Guha, R., Penguin, 1995
16. Environment and Development: The Place of Human Ecology in South Asian Studies Programme, Rambo, T.,
17. Environment Crisis and Sustainable Development, Bahuguna, S., Natraj, Dehradun, 2000
18. Environmental Issues and Researches in India, Agarwal, S.K. and Garg, R.K (eds), Himanshu Publications, 1988
19. Environmental Law and Policy in India - Cases Materials and Statutes, Divan, S. and Rosencranz A., Oxford, 2001
20. Our Common Future: The World Commission on Environment and Development, Oxford University Press, Oxford, New York, 1987

PLANNING TECHNIQUES			
Course Code	**MUP 105**	**Credits**	**02**
Contact Hours (Hrs/Week)	**02**	**Semester**	**01**
Course Category	**DCC**		

INTRODUCTION

The course introduces techniques used for planning at various stages from preliminary to advanced.

COURSE OBJECTIVES

The objective of the course is to:

- Enable the students to understand various techniques for efficient physical planning
- Enable students to use various planning tools and techniques

PREREQUISITE NIL

COURSE LEARNING OUTCOMES

Having successfully completed this course, the student will be able to understand:

- Application of various planning techniques
- Understanding of various planning tools

PEDAGOGY

Classroom teaching is supported by giving handouts, PowerPoint slides. Readings/Short Movies may be shown to students. Students may visit site for collecting context specific data for getting better understanding of real-life project details.

EVALUATION SCHEME:

Course Type			Examination		Relative Weights						
L	**P**	**S**	**TH**	**PR**	**CAT**	**CAP**	**MTET**	**MTEP**	**ETET**	**ETIP**	**ETEP**
2	0	0	Yes	--	10	--	30	--	60	--	--

CONTENT

S. No	Contents	Contact Hours
5.	**Unit 1: Survey Techniques and Mapping** • Data base for physical surveys including land use, building use, density, building age, etc., and socio-economic surveys; Survey techniques; Land use classification or coding and expected outputs; Techniques of preparing base maps including understanding the concepts of scales, components and detailing for various levels of plans like regional plan, city plan, zoning plan, and local area plan.	**07**
6.	**Unit 2: Analytical Methods** • Classification of regions, delineation techniques of various types of regions, analysis of structure of nodes, hierarchy, nesting and rank size; Scalogram, sociogram, etc.; Planning balance sheet; Threshold analysis; Input output analysis, SWOT analysis;	**07**
7.	**Unit 3: Demographic Methods** • Methods of population forecasts and projections; Lorenz Curve, Ginni Ratio, Theil's index, rations: urban – rural, urban concentration, metropolitan concentration; Location dimensions of population groups – social area and strategic choice	**07**

	approach – inter connected decision area analysis.	
8.	**<u>Unit 4:</u> Planning Standards** • Spatial standards, performance standards and benchmarks, and variable standards; UDPFI guidelines, zoning regulations and development control rules and regulations.	**07**

<u>REFERENCE BOOKS</u>

1. Urbanisation and Urban Systems in India, Ramchandran R. Oxford University Press, 1997
2. Cities Urbanisation and Urban Systems, Sidddhartha K. and Mukherjee S., Kisalaya Publications, 2016
3. Regional Planning, Glasson J., Open University Press, 2007
4. Economic and Social Geography Made Simple, Knowles R. and Wareing J., Rupa and Company, 1990
5. Planning Techniques for AITP, Reader on Institute of Town Planners India
6. UDPFI Guidelines Volume 1, Ministry of Urban Affairs and Employment Govt. of India, New Delhi

INFRASTRUCTURE AND MOBILITY PLANNING			
Course Code	**MUP 107**	**Credits**	**02**
Contact Hours (Hrs/Week)	**02**	**Semester**	**01**
Course Category	**DCC**		

INTRODUCTION

The course introduces students to different types of utilities and services required for efficient operations of systems. The course also introduces students to the aspects that have an impact on transportation systems in the city.

COURSE OBJECTIVES

The objective of the course is to:

- Sensitize students towards the importance and requirement of infrastructure that supports development
- Make students aware about the significance of infrastructure in planning
- Enable students to provide for the required infrastructure and services for planned development

PREREQUISITE NIL

COURSE LEARNING OUTCOMES

Having successfully completed this course, the student will be able to understand:

- Design principles for various services and utilities
- Understanding of aspects that affect Transport Planning

PEDAGOGY

Classroom teaching is supported by giving handouts, PowerPoint slides. Readings/Short Movies may be shown to students. Students may visit site for collecting context specific data for getting better understanding of real- life project details.

EVALUATION SCHEME:

Course Type			Examination		Relative Weights						
L	**P**	**S**	**TH**	**PR**	**CAT**	**CAP**	**MTET**	**MTEP**	**ETET**	**ETIP**	**ETEP**
2	0	0	Yes	--	10	--	30	--	60	--	--

CONTENT

S. No	Contents	Contact Hours
1.	**Unit 1: Role of Infrastructure in Development** • Elements of Infrastructure (physical, social, utilities and services); Basic definitions, concepts, significance and importance; Data required for provision and planning of urban networks and services; Resource analysis, provision of infrastructure, and land requirements; Principles of resource distribution in space; Types, hierarchical distribution of facilities, Access to facilities, provision and location criteria, Norms and standards, etc. Familiarizing to CPHEEO Manual and Guidance	07
2.	**Unit 2: Planning and Management of Water, Sanitation and Storm Water** • Water – sources of water, treatment and storage, transportation and	07

	distribution, quality, networks, distribution losses, water harvesting, recycling and reuse, norms and standards of provision, institutional arrangements, planning provisions and management issues; Sanitation – points of generation, collection, treatment, disposal, norms and standards, grey water disposal, DEWATS, institutional arrangements, planning provisions and management issues. Storm water – rainfall data interpretation, points of water stagnation, system of natural drains, surface topography and soil characteristics, ground water replenishment, storm water collection and disposal, norms and standards, institutional arrangements, planning provisions and management issues.	
3.	**Unit 3: Planning and Management of Municipal Wastes, Power and Fire** • Municipal and other wastes – generation, typology, quantity, collection, storage, transportation, treatment, disposal, recycling and reuse, wealth from waste, norms and standards, institutional arrangements, planning provisions and management issues. Power – Sources of power procurement, distribution networks, demand assessment, norms and standards, planning provisions and management issues. Fire – History of fire hazards, vulnerable locations, methods of firefighting, norms and standards, planning provisions and management issues.	**07**
4.	**Unit 4: City Development and Mobility Infrastructure Planning Management and Design** • Role of transport, types of transport systems, evolution of transport modes, transport problems and mobility issues; Urban form and Transport patterns, land use – transport cycle, concept of accessibility; Hierarchy, capacity and geometric design elements of roads and intersections; Basic principles of Transport infrastructure design; Traffic and transportation surveys and studies, traffic and travel characteristics; Urban transport planning process – stages, study area, zoning, data base, concept of trip generation Transport, environment and safety issues; principles and approaches of traffic management, transport system management.	**07**

REFERENCE BOOKS

1. Environmental Engineering, Howard S. Peavy, Tata Mc Grawhill
2. Regulation and the Management of Public Utilities, C. S. Morgan, Gale -2010
3. Water Supply Engineering, S. K. Garg, Khanna Publishers -2017
4. Manual on Sewerage and Sewage Treatment, CPHEEO -1993
5. Urban Planning Manual, AIILGS Reader
6. Solid Waste Management, Krishana Gopi Sanoop P, Sasikumar K, Phi Learning -2015
7. Solid Waste Management, Dewan, Sudarshan, Discovery Publishing House - 1996
8. Telecommunication Management Networks (TMN) Implementation, Amani Omer, Lambert Academic Publishers. -2011
9. Firefighting: Management and Techniques, Overton Frank, Inkata -1996
10. Water Supply Engineering: Environmental Engineering – I, Arun Kumar Jain, Ashok Kumar Jain, B. C. Punmia, Laxmi Publications
11. Traffic Engineering and Transport Planning, L.R. Kadiyali, Khanna Publications -2018
12. Transportation Engineering and Planning, Author: C. S Papacostas, P. D Prevedouros, Publisher: PHI Learning -2019
13. Principles of Urban Transport Systems Planning, B.G. Hutchinson, McGraw Hill -1974
14. Urban Transport: Planning and Management, A K Jain, APH Publishing -2016
15. Modelling Transport; Juan De Dios Ortuzer, Luis G. Willumsen; 3rd Edition, Wiley, 2001, England.

PLANNING HISTORY AND THEORIES			
Course Code	**MUP 109**	**Credits**	**02**
Contact Hours (Hrs/Week)	**02**	**Semester**	**01**
Course Category	**DCC**		

INTRODUCTION

The course introduces students to classical practices of city/urban planning

COURSE OBJECTIVES

The Objective of the course is

- To make students aware about the traditional practices and theories based on which the cities evolved and the interconnectedness amongst them
- To sensitise students to the classical theories and practices that led to the evolution of cities as we see today
- To learn how planning thoughtful planning emerged as a discipline with various theories with modern outlook

PREREQUISITE NIL

COURSE LEARNING OUTCOMES

Having successfully completed this course, the student will be able to

- Observe and appreciate the application of various theories of planning in the cities historically and contemporarily
- Apply theories of planning to the practice

PEDAGOGY

Classroom teaching is supported by giving handouts, PowerPoint slides. Readings/Short Movies may be shown to students. Students may visit site for collecting context specific data for getting better understanding of real- life project details.

EVALUATION SCHEME:

Course Type			Examination		Relative Weights						
L	**P**	**S**	**TH**	**PR**	**CAT**	**CAP**	**MTET**	**MTEP**	**ETET**	**ETIP**	**ETEP**
2	0	0	Yes	--	10	--	30	--	60	--	--

CONTENT

S. No	Contents	Contact Hours
1.	**Unit 1: Role of Infrastructure in Development** • Elements of Infrastructure (physical, social, utilities and services); Basic definitions, concepts, significance and importance; Data required for provision and planning of urban networks and services; Resource analysis, provision of infrastructure, and land requirements; Principles of resource distribution in space; Types, hierarchical distribution of facilities, Access to facilities, provision and location criteria, Norms and standards, etc. Familiarizing to CPHEEO Manual and Guidance	**07**
2.	**Unit 2: Planning and Management of Water, Sanitation and Storm Water** • Water – sources of water, treatment and storage, transportation and distribution, quality, networks, distribution losses, water harvesting,	**07**

	recycling and reuse, norms and standards of provision, institutional arrangements, planning provisions and management issues; Sanitation – points of generation, collection, treatment, disposal, norms and standards, grey water disposal, DEWATS, institutional arrangements, planning provisions and management issues. Storm water – rainfall data interpretation, points of water stagnation, system of natural drains, surface topography and soil characteristics, ground water replenishment, storm water collection and disposal, norms and standards, institutional arrangements, planning provisions and management issues.	
3.	**Unit 3: Planning and Management of Municipal Wastes, Power and Fire** • Municipal and other wastes – generation, typology, quantity, collection, storage, transportation, treatment, disposal, recycling and reuse, wealth from waste, norms and standards, institutional arrangements, planning provisions and management issues. Power – Sources of power procurement, distribution networks, demand assessment, norms and standards, planning provisions and management issues. Fire – History of fire hazards, vulnerable locations, methods of firefighting, norms and standards, planning provisions and management issues.	**07**
4.	**Unit 4: City Development and Mobility Infrastructure Planning Management and Design** • Role of transport, types of transport systems, evolution of transport modes, transport problems and mobility issues; Urban form and Transport patterns, land use – transport cycle, concept of accessibility; Hierarchy, capacity and geometric design elements of roads and intersections; Basic principles of Transport infrastructure design; Traffic and transportation surveys and studies, traffic and travel characteristics; Urban transport planning process – stages, study area, zoning, data base, concept of trip generation Transport, environment and safety issues; principles and approaches of traffic management, transport system management.	**07**

REFERENCE BOOKS

1. Planning Theory, Healey P., Pergamon Press
2. Planning Theory, Allmendinger Philip, Palgrave MacMillan - 2017
3. Cities of the World: World Regional Urban development, Brunn S.D.et all. -2003
4. City Assembled: The Elements of Urban form through History, Kostof Spiro, Thames and Hudson - 2005
5. Contemporary Urban Planning, Levy John M, Longman -2016
6. Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century, Hall Peter - 2002
7. Urban and Regional Planning Since Independence: Retrospect and Prospect: Technical papers, National Town and Country Planners Congress, Mysore, Ministry of Urban Affairs and Employment
8. The City in History: Its Origins, Its Transformations, and Its Prospects;Lewis Mumford; Mariner Books - 1968
9. The Oxford Handbook of Urban Planning, Weber Rachel et all, Oxford University Press -2012
10. Urban Pattern: City Planning and Design, Gallion, Arthur B. and Eisner Simon, CBS Publishers - 2003

WOMEN AND HABITAT			
Course Code	**MUP 111**	**Credits**	**02**
Contact Hours (Hrs/Week)	**02**	**Semester**	**01**
Course Category	**HMC**		

INTRODUCTION

The course introduces students to the importance and role of women in all the processes and outcomes of urban planning

COURSE OBJECTIVES

The objective of the course is to:

- To enable students to also have a gender sensitive perspective in urban planning
- To study and identify whether urban planning was/is gender sensitive
- To understand and identify the parameters which are not sensitive towards women and need modification or the parameters which are needed to be included, while planning urban areas, in order to make urban planning more sensitive and inclusive towards women
- To identify processes which would ensure increased participation of women in urban planning

PREREQUISITE NIL

COURSE LEARNING OUTCOMES

Having completed the course, the students would be:

- Able re-imagine urban planning from a gender sensitive perspective;
- Able to plan urban areas which provide equitable opportunity to women in urban areas as compared to men;
- Able to plan more safe, secure and healthy urban areas for women.

PEDAGOGY

Classroom teaching is supported by giving handouts, PowerPoint slides. Readings/Short Movies may be shown to students. Students may visit site / industry/professionals for collecting context specific data and for getting better understanding of real-life issues related to urban planning details.

EVALUATION SCHEME:

Course Type			Examination		Relative Weights						
L	**P**	**S**	**TH**	**PR**	**CAT**	**CAP**	**MTET**	**MTEP**	**ETET**	**ETIP**	**ETEP**
2	0	0	Yes	--	10	--	30	--	60	--	--

CONTENT

S. No	Contents	Contact Hours
1.	**Unit 1: Gender and Urban Planning** • Defining Habitat; Understanding Habitat from Women's perspective; Concept of Inclusive Planning; Importance of gender sensitive urban planning; Different needs of women and men; different roles of women in a society.	**07**
2.	**Unit 2: Gender related concepts** • Linking SDG no. 5, 11 and Urban Planning; Concepts of Women Empowerment through Urban Planning, Gender Sensitive, Gender Impact Assessment, Gender Mainstreaming, Gender budgeting, Gender auditing.	**07**

3.	**Unit 3: Gender related issues** • Key Issues - Access to livelihood and employment, Access to Municipal Services (Water, Sanitation, Solid Waste Management), Access to Urban Spaces (Land, Housing, Finance), Access to social services (healthcare, food, education), Safety/security, design for Mobility, Accessibility, Housing , public spaces; Acknowledging Issues like care giving as an unpaid job, women in different socio economic conditions using the resources in urban areas differently, work areas are only work areas and doesn't facilitate women in fulfilling her other obligations , Impact of climate change and environmental disasters on Women.	**07**
4.	**Unit 4: Governance and Institutionalizing Gender Sensitive Urban Planning** • Women in Local Governance in the context of 74th CAA; Gender Sensitive Decision making in Planning; Men define urban (statutory definition of urban area); elements of Draft National Policy for Women (2016) by MoWCD; Institutional mechanisms for gender equality in urban planning.	**07**

REFERENCE BOOKS

1. Study on "Addressing Gender Concerns in India's Urban Renewal Mission"; Renu Khosla, UNDP India, 2009
2. Manual on Gender Mainstreaming in Urban Planning and Urban Development; Urban Development Vienna, Municipal Department 18 (MA 18) – Urban Development and Planning; 2013
3. Gender and Urban Planning: Issues and Trends; UN Human Settlements Programme; 2012
4. Institutionalizing Gender Equality Urban Development Experience of The Bangladesh Local Government Engineering Department; Asian Development Bank; 2017
5. Gender and Planning; Susan S Fainstein, Lisa J Servon; -2005
6. Fair Shared Cities: The impact of Gender Planning; Marion Roberts; Edited by: Ines Sanchez de Madariaga; Routledge Taylor and Francis Group; 2013 (e books 2016)

DEMOGRAPHICS AND STATISTICAL ANALYSIS			
Course Code	**MUP 113**	**Credits**	**01**
Contact Hours (Hrs/Week)	**02**	**Semester**	**01**
Course Category	**HMC**		

INTRODUCTION

The course introduces the students to the aspects related to population growth, distribution, etc and the statistical methods that help analysis of data pertaining to people and helps to correlate this analysis with people for efficient planning

COURSE OBJECTIVES

The Objectives of the course are:

- To create awareness about the population geography and its role in economic and spatial growth
- To develop basic understanding of concepts of demography
- To understand importance of geographical aspect of population
- To learn and use tools to analyse data

PREREQUISITE NIL

COURSE LEARNING OUTCOMES

Having completed this course, the students would be able to:

- Understand the issues and aspects related to population of any urban area like composition, distribution, change etc.
- Understand tools required to analyse data related to aspects of urban development
- Interpret the analysis of data and connect it to decision making process

PEDAGOGY

Classroom teaching is supported by giving handouts, PowerPoint slides. Readings/Short Movies may be shown to students. Students may visit site / industry/professionals for collecting context specific data for getting better understanding of real- life project details.

EVALUATION SCHEME:

Course Type			Examination		Relative Weights						
L	**P**	**S**	**TH**	**PR**	**CAT**	**CAP**	**MTET**	**MTEP**	**ETET**	**ETIP**	**ETEP**
0	2	0	--	--	0	35	--	15	0	--	50

CONTENT

S. No	Contents	Contact Hours
1.	**Population Studies** • Distribution and Density of Population - Measures of Population Distribution and Concentration; Factors Affecting Population Distribution and Density; World Population Distribution; Density Distribution in India; Population Change; Fertility and Mortality; Mobility; Factors Affecting Population Change; Demographic Transition Theory; Some Population Theories (Overview only). • Migration - Types of Migration; Determinants of Migration; Migration Models. • Population Composition - Assumptions, Methods, Techniques. Distribution and Density of Population - Measures of Population Distribution and Concentration; Factors.	**07**

2.	**Basics of Statistics** • Measures of Central Tendency and Dispersion - Arithmetic Mean; Weighted Mean; Geometric and Harmonic Mean; Median and Mode; Variance and Standard Deviation • Time Series and Forecasting - Trend Analysis - Cyclical Variation, Seasonal Variation, Irregular Variation; Various Methods in Time Series Analysis – Moving Average, Ratio to Trend, Link Relative and Residual	**10**
3.	**Probability and decision making** • Probability Distribution and Sampling Distribution - Use of Expected Value in Decision Making; Binomial, Poisson and Normal Distribution (only application).	**04**
4.	**Sampling and Correlation – Regression Analysis** • Determination of Sample Size and Types of Sampling; Sampling Distribution (concept only); ANOVA Methods • Correlation and Regression Binary and Multiple Linear Regression; Simple and Multiple Correlation; Estimation of Parameters – The Method of Ordinary Least Squares; Hypothesis Testing. Factor Analysis-PCA	**07**

REFERENCE BOOKS

1. Demography, Peter R. Cox, Cambridge University Press -1976
2. Studies in Demography, S.C. Srivastava et all, Anmol Publishers - 2005
3. Introduction to Applied Demography: Data Sources and Estimation Technique, William J Seraw, Sage Publishers - 1984
4. Patterns of Migration in the National Capital Region, National Institute of Urban Affairs (NIUA), New Delhi
5. India's Population Problems, S.N. Agarwal, Tata McGraw Hill Co., Bombay - 1975
6. Statistics for Management, Richard I. Levin et all, Pearson - 2017
7. Econometrics Damodar Gujarati Tata Mc Graw Hill - 2017
8. Quantitative Methods: Theory and Applications, J.K. Sharma, Macmillan - 2010
9. Quantitative Methods for Business, Management and Finance, Swift, Palgrave - 2005
10. Statistics, Larry J. Stephens, Tata McGraw Hill
11. Quantitative Techniques in Geography – An Introduction, Robert Hammond et al, Oxford University Press - 1978
12. Applied Statistics, P.K. Majumdar, Rawat Publications - 2010

URBAN INFORMATICS AND ANALYTICS			
Course Code	**MUP 115**	**Credits**	**02**
Contact Hours (Hrs/Week)	**04**	**Semester**	**01**
Course Category	**BSAE**		

INTRODUCTION

The course introduces students to the role of technology (primarily Information Technology) in Urban development

COURSE OBJECTIVES

The objective of the course is to:

- Enable students to make use of technology to improve the quality of life of people
- Enable students to identify the areas where technology can be applied help improve upon the planned development
- To make use of technology to improve the available infrastructure, services

PREREQUISITE NIL

COURSE LEARNING OUTCOMES

Having completed the course, the students would be:

- Enable students to make use of technology to improve the quality of life of people
- Able to understand the application areas if IT in urban planning
- Able to build more integrated and efficient urban systems

PEDAGOGY

Classroom teaching is supported by giving handouts, PowerPoint slides. Readings/Short Movies may be shown to students. Students may visit site / industry/professionals for collecting context specific data for getting better understanding of real- life project details.

EVALUATION SCHEME:

Course Type			Examination		Relative Weights						
L	**P**	**S**	**TH**	**PR**	**CAT**	**CAP**	**MTET**	**MTEP**	**ETET**	**ETIP**	**ETEP**
0	4	0	--	--	0	35	--	15	0	--	50

CONTENT

S. No	Contents	Contact Hours
1.	Introduction to nature of problems in Urban areas, Role of technology in urban planning, concept of Data sciences; Conceptual understanding of term - spatial analytics, concept of Big Data and its role in urban planning/development.	**10**
2.	Introduction to SQL; Cleaning, manipulating, and analyzing urban data, philosophy and good practices of data science; the flow chart of a data-driven project.	**14**
3.	Visualizing data with charts, graphs, and table; Accessing public data from the web (including Twitter, Google, Census data, and the Open Data portals of cities).	**14**
4.	Developing spatial indicators and mapping urban data with open source tools.	**18**

REFERENCE BOOKS

1. Seeing Cities Through Big Data, Editors: Thakuriah, Piyushimita (Vonu), Tilahun, Nebiyou, Zellner, Moira (Eds.), Springer Geography - 2016

2. Big Data Support of Urban Planning and Management: The Experience in China (Advances in Geographic Information Science) Edited by Shen, Zhenjiang; Li, Miaoyi; 2018; Springer; Switzerland - 2018

3. From Social Butterfly to Engaged Citizen: Urban Informatics, Social Media, Ubiquitous Computing, and Mobile Technology to Support Citizen Engagement; Edited by Foth, Marcus; Forlano; Laura, Satchell, Christine; Gibbs, Martin; Donath, Judith; 2011; MIT Press; USA - 2011

4. Handbook of Research on Urban Informatics: The Practice and Promise of the Real-Time City; Marcus Foth; Information Science Reference, USA/UK
by Marcus Foth (Author, Editor) - 2008

Generic Open Elective			
Course Code **Contact Hours (Hrs/Week)** **Course Category**	**GEC 101** **GEC**	**Credits** **Semester**	**02** **01**

(i) GEC enable exposure to some other discipline/ subject/domain or nurtures candidate's proficiency and skills in niche areas which are of interest to the students. GEC courses can be completed in-house (GEC courses offered by IGDTUW) or from any other university in online/offline mode or through MOOC (NPTEL, SWAYAM, edX, Coursera etc) or GIAN Courses.

(ii) Variety of courses may include Creative Art Courses like (Dance, Yoga, Music etc), Social Welfare Courses like NCC, NSS, *Unnat Bharat*, *Swachh Bharat*, Fire Fighting etc and Women Empowerment Courses like Women Safety, Self Defence, Gender Sensitization etc) among several others.

(iii) Student may also opt for subjects from Entrepreneurship category where she can enhance/groom her skills to pursue her career as successful entrepreneur. She will be evaluated based on her business plan, innovation involved in the idea, development and execution for the same. Student must be able to prove her sincere efforts in implementing her business idea and bringing it to the next level.

(iv) If a student is interested in pursuing research career, she may opt for writing research paper and based on the quality of research paper published, she may be suitably awarded the marks/grade. The necessary consent / approvals from the department, as and when required may be obtained by the student

(v) Students, who are more inclined towards project development, may work on a live and sufficiently large project under the guidance of a faculty member or industry person. These students may be evaluated based the performance in the project development.

(vi) If the student opts for a GEC course outside IGDTUW in offline/online mode, all the expenses including registration and certification fee shall be borne by the student. The duration of GEC course shall be minimum 8 weeks (Tentatively as per University Norms).

(vii) For MOOC / GIAN / other courses department may prepare separate guidelines for conduct of the course and students must seek timely prior approval from department for registering course outside university (online/offline) and for any online / MOOC / GIAN / course