



योजना तथा वास्तुकला विद्यालय, विजयवाड़ा
School of Planning and Architecture, Vijayawada
An Institute of National Importance, Ministry of Education, Govt. of India

Department of Planning,
Lecture Plan, Odd Semester, AY 2024-25

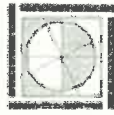
Name of Course: Master of Planning Integrated Semester

Subject Name:	Data Analytics and Techniques in Planning (MPIS113)
Year & Sem:	I Year I Semester
Course Duration:	16 th August 2024 to 02 nd December 2024
Course Coordinator:	Monica Sekar
Number of Credits:	3
Subject Category:	Theory
Total Periods/Week:	3
Internal Assessment	50
End Evaluation	50
Total Marks	100
Total No. of Internal Assessment & Mode	6, five worksheets and one written exam

Subject Objective: To acquire proficiency in quantitative techniques and computing tools that are applicable in planning domain to conduct empirical studies

Week	Lecture / Session Topic (Teaching-Learning Objective aimed)	Unit and Assignment
Week 1: 16.08.2024		
Week 2: 19.08.2024	Types of data, data aggregation, units of measurement, standard notation; coding and decoding methods, tabulation and graphical presentation of data; Introducing web-based information portals and datasets as raw information sources; Elementary association models and decision making; Index numbers (weighted and unweighted); Application of index numbers in spatial planning; Calculation techniques of vital events	Unit 1: Data sources and surveys in planning
Week 3: 26.08.2024	Quantitative and qualitative data collection methods; Validity and reliability of data; Questionnaire design and typology; measurement scales and their applications; Sampling techniques, sample size calculations UNIT II: Descriptive statistics (frequency distribution; measures of central tendency; measures of dispersion); Introduction to probability	Units 1 & 2: Introduction to statistical methods for planning Assignment 1: Worksheet using Excel

S. Monica



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Week 4: 02.09.2024	Normal and standard normal distribution; Tests of hypothesis - Type I & II errors, one-tailed and two-tailed tests, chi-square test, student t test	Unit 2 Assignment 2: Worksheet using SPSS
Week 5: 09.09.2024	Correlation - scatter plot diagrams, correlation coefficients; Least square method; Assumptions of regression analysis, linear regression	Unit 3: Correlation and Regression
Week 6: 14 Sept to 22 Sept (except first years)	Field Work	
Week 7: 23.09.2024	Multiple regressions; Dummy variables; Functional forms; Binary dependent variables; Instrument variables; Time series analysis	Unit 3 Assignment 3: Worksheet using SPSS / GeoDa
Week 8: 30.09.2024	Definitions - geoinformatics, Remote Sensing, GIS, the concept of earth surface projections; the need for GIS, Spatial Data Infrastructure; accuracy and precision, raster and vector data, spatial thematic models, Components of a GIS	Unit 4: Spatial Data and Geographic Information Systems
Week 8 & 9: 01.10.2024 to 07.10.2024	Mid- Semester Assessment week	
Week 10: 14.10.2024	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.	Unit 4 Assignment 4: Worksheet using ArcGIS and GeoDa
Week 11: 21.10.2024 to 27.10.2024	II Field Work	
Week 12: 28.10.2024	Maps as a representation of reality, Elements of maps; Graphical, linear and areal scales, Notations involving basic discipline of maps; Measurement of areas; Data creation and query	Unit 5: Planning Techniques

A. Mani



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Week 13: 04.11.2024	Map preparation - geo-referencing, digitization, scales, layers, layout, topology creation, spatial data analysis - buffer, overlay and multi-criteria decision modelling, hotspot analysis	Unit 5 Assignment 5: Worksheet using ArcGIS
Week 14: 11.11.2024		
Week 15: 18.11.2024	Exercise with hypothetical case - application of learned methods and techniques	Workshop
Week 16: 25.11.2021		

Reference Books:

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.
5. Gujarati D.N. and Porter, D.C., 2009. Basic econometrics. McGraw-Hill.
6. Sachithanandan (2004). Reading material on Planning Techniques. Institute of Town Planners India, New Delhi.

Note:

1. Any other closed holidays as declared by SPAV shall supersede the above lecture plan. Holidays shown above may alter as per Notice from time to time.
2. Assessment Sessions may be re-scheduled, with prior intimation.
3. Reading lists provided is not exhaustive and is subject to addition – students are advised to follow progression of class to keep abreast of the new reading lists, if any.

J. Narain