



Department of Planning,
Lecture Plan, Odd Semester, AY 2025-26

Name of Course: M. Planning

Subject Name:	Data Analytics and Techniques in Planning
Year & Sem:	Master of Planning integrated Semester -1 st Sem
Course Duration:	Aug 19, 2026 – Dec 4, 2026
Course Coordinator:	Dr. Valliappan AL, Assistant Professor & Mr. J. Durga Sasank, Assistant Professor; Department of Planning.
Number of Credits:	03
Subject Category:	TC
Total Periods/Week:	3
Internal Assessment	50 (minimum pass marks 50%)
End Evaluation	50 (minimum pass marks 50%)- Written Exam
Total Marks	100
Total No. of Internal Assessment & Mode	Assessment -1- Questionnaire Design /Submission of Google Classroom-10 M Assessment-2-Worksheet of 5 Problems and 2 Problems in SPSS -10 M Assessment-3-Midterm Examination -20 M Assessment -4- Thematic Map Preparation in GIS-10 M

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)	Session Mode	References/Suggested Readings
Week 1 19-21 Aug 2026	Types of Data, Data aggregation, units of measurement, standard notation, coding and decoding methods, tabulation and graphical presentation of data,	Lecture	1. Agarwal B. L. (2007). <i>Programmed Statistics</i> . New Age International Publishers, New Delhi. 2. C.R. Kothari – <i>Research Methodology: Methods and Techniques</i>
Week 2 24-28 Aug 2026	Introduction to web-based information portals and datasets as new raw information sources, Index numbers Calculation techniques of vital events, Data Collection methods, Questionnaire Design and Typology	Lecture	
Week 3 31 Aug – 4 Sep	Measurement Scales and their Applications, Sampling Techniques and Sample size calculations	Lecture	
Week 4 7-11 Sep 2026	Descriptive Statistics (Frequency Distribution, Measure of central Tendency, Measures of Dispersion)	Lecture	1. Gupta and Gupta (2012). <i>Business Statistics</i> . Sultan Chand and Sons, Delhi.



Department of Planning,
Lecture Plan, Odd Semester, AY 2025-26

Week	Lecture / Session Topic (Teaching-Learning Objective aimed)	Session Mode	References/Suggested Readings
Week 5 & 6 12-22 Sep 2026	Field Work		
Week 7 23 - 26 Sep, 2026	Introduction to Probability, Normal and Standard normal Distribution		
Week 8 28 Sep – 2 Oct 2026	Tests of Hypothesis-Type I & II errors, one-tailed and two tailed tests, Chi square Tests, Student T Test	Lecture	
Week 9 5–9 Oct 2026	Correlation- Scatter Plot Diagrams, Correlation Coefficients, Least Square method,	Lecture	1. Gupta and Gupta (2012). <i>Business Statistics</i> . Sultan Chand and Sons, Delhi. 2. Discovering Statistics Using IBM SPSS Statistics — Andy Field (5th Edition, 2018)
Week 10 12–16 oct 2026	Assumptions of Regression Analysis, Linear Regression, Multiple Regression, Dummy Variables	Lecture	
Week 11 19 – 23 Oct 2026	Mid- Semester Assessment week		
Week 12 26 – 30 Oct 2026	Functional Forms, Binary dependent variables, Instrument variable, Times series Analysis	Lecture	
Week 13 2 – 6 Nov 2026	Definitions – Geo informatics, Remote Sensing, GIS, Earth Surface Projections, Spatial Data Infrastructure, accuracy and Precision, raster and vector data, Spatial Thematic Models	Lecture	Paul A. Longley, Michael F. Goodchild, David J. Maguire & David W. Rhind — <i>Geographic Information Science and Systems</i>
Week 14 9- 13 Nov 2026	Components of GIS, Spatial and Attribute data- Input and output, Spatial Data entry, Data Structures for GIS, Vector Data Structures Coordinate systems, Geodetic Data-Point positioning, problems, measurements, spatial analysis using lab modules etc.	Lecture	
Week 15 16-20 Nov 2026	Maps as a representation, Elements of Maps, Graphical, Linear and areal scales, notations involving discipline of maps, Measurements of areas, Data creation and query	Lecture	Sachithanandan (2004). <i>Reading Material on Planning Techniques</i> . Institute of Town Planners India, New Delhi



**Department of Planning,
Lecture Plan, Odd Semester, AY 2025-26**

Week	Lecture / Session Topic (Teaching-Learning Objective aimed)	Session Mode	References/Suggested Readings
Week 16 23 - 27 Nov 2026	Map Preparation-Geo referencing, digitization, scales, layers, layout, topology creation, spatial data analysis-buffer, overlay and multi criteria decision modelling, Hotspot analysis.	Lecture	
Week 17 30 Nov - 4 December 2026	Revision of units and End of Classwork		

Details of Internal Assessments

Tentative Date/Week of the Assessment	Mode of Assessment	Marks of the Assessment
Week 3	Questionnaire Design /Submission of Google Classroom	10
Week 10	Worksheet of 5 Problems and 2 Problems in SPSS/Submission in Google Classroom	10
Week 11	Mid Term Assessment	20
Week 16	Map Preparation	10

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. Durga Sasank

Signature of the Faculty