

13. MAJOR COURSE- MJ 11: PRACTICALS-IV: (INSTRUMENTAL SURVEY AND SOCIO-ECONOMIC PROJECT WORK)**Course Objective:**

1. To familiarise students about various Instruments, methods, tools and techniques of ground survey.
2. To make student learn and apply project development, carrying out primary survey for data collection.

Sl.	Unit	Topics	Methodology	Assessment	Outcome
1	Unit 1: 16 Lectures	Importance of field work, Scope and purpose, Types of survey, Principles and applications of selected survey instruments, Plane Table, Plan preparation, Resection method: two-point problem, three-point problem, all methods.	<ul style="list-style-type: none"> • Lecture • Digital Classes • Group Discussion • Self-study • EX-situ Examples. 	<ul style="list-style-type: none"> • Quiz on basic concepts • Test • Assignments • Presentation 	<ul style="list-style-type: none"> • Understand the importance of field work, types of survey and application of instruments for leveling • Handle and apply the instrument to measure height, spot height determination techniques • Synthesis and develop the idea of project work on the basis of secondary and primary survey.
2	Unit 2: 16 Lectures	Prismatic Compass: Open and closed traverse, Other smaller instruments: Sextant, Abney Level and Indian Clinometer. Dumpy Level: Traverse Survey, Spot height determination and contour plan preparation,	<ul style="list-style-type: none"> • Lecture • Digital Classes • Group Discussion • Self-study • Ex-situ Examples. 	<ul style="list-style-type: none"> • Quiz on basic concepts and Theories • Class Test • Assignments • Presentation 	<ul style="list-style-type: none"> • Understand the importance of field work, types of survey and application of instruments for leveling • Handle and apply the instrument to measure height, spot height determination techniques • Synthesis and develop the idea of project work on the basis of secondary and primary survey.
3	Unit 3: 16 Lectures	Theodolite: horizontal and vertical (height) measurement, Accessible and inaccessible method. Survey of selected area, Preparation of base map by the use of surveying instruments.	<ul style="list-style-type: none"> • Lecture • Digital Classes • Group Discussion. • Ex-situ Examples. • Self-study 	<ul style="list-style-type: none"> • Quiz on basic concepts and Theories • Class Test • Assignments • Presentation 	<ul style="list-style-type: none"> • Understand the importance of field work, types of survey and application of instruments for leveling. • Handle and apply the instrument to measure height, spot height determination techniques • Synthesis and develop the idea of project work on the basis of secondary and primary

4	Unit 4: 16 Lectures	Socio-economic project work based on primary or secondary data sources	<ul style="list-style-type: none"> • Lecture • Digital Classes • Group Discussion • Self-study • Ex-situ Examples. 	<ul style="list-style-type: none"> • Quiz on basic concepts and Theories • Class Test • Assignments • Presentation 	<p>survey.</p> <ul style="list-style-type: none"> • Understand the importance of field work, types of survey and application of instruments for leveling • Handle and apply the instrument to measure height, spot height determination techniques • Synthesis and develop the idea of project work on the basis of secondary and primary survey.
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Suggested Readings:

1. Robinson A.H (1995) Elements of Cartography John Wiley & Sons USA .
2. Sarkar A.K.(1997): Practical Geography :A Systematic Approach, Oriental Longman Calcutta .
3. Sharma J.P.(2010): Prayogatmak Bhugol,(Hindi) Sahitya Bhawan, Agra.

Semester: VI