

Techno India NJR Institute of Technology



Course File

ADVANCED SURVEYING LAB (4CE4-24)

For Techno India NJR Institute of Technology
पंकज पोखवाल
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(Principal)

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Department of CE



RAJASTHAN TECHNICAL UNIVERSITY, KOTA

SYLLABUS

II Year-IV Semester: B.Tech. (Civil Engineering)

4CE4-24: ADVANCED SURVEYING LAB

Credit: 01

Max. Marks: 100 (IA:60, ETE:40)

OL+OT+2P

1. To measure the horizontal and vertical angles by Theodolite.
2. To determine the Height of an object by trigonometric leveling (Instruments in same vertical plane).
3. To determine the Height of an object by trigonometric leveling (Instruments in different vertical planes).
4. Measurement of angles, length of survey line using Total Station, finding the coordinate of station
5. To measure and adjust the angles of a braced quadrilateral.
6. To prepare the map of given area by plane tabling.
7. Measurement of area of a traverse by Total Station

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

Course Overview :

Advance surveying instruments provides faster and more precise surveying than conventional instruments. In conventional surveying, chain and tape are used for making linear measurements while compass and ordinary theodolites are used for making angular measurements. Levelling work is carried out using a Dumpy level and a levelling staff. With such surveying instruments, survey work will be slow and tedious. Hence modern surveying instruments are becoming more popular and they are gradually replacing old surveying instruments such as compass and Dumpy level. With modern surveying instruments, survey work will be precise, faster and less tedious.

Course Outcomes:

CO.NO.	Cognitive Level	Course Outcome
1	Comprehension	Test the relative altitudes and distance of different points on ground.
2	Application	Perform the tests for setting of horizontal curves in field.
3	Analysis	Test the Survey work using Total-station.
4	Synthesis	Prepare the map of area by Plane Table.
5	Evaluation	Measurement of area of horizontal and vertical angle by Total Station.

Prerequisites:

1. Fundamentals knowledge of Total Station Surveying.
2. Fundamentals knowledge of Plane Table Surveying.
3. Fundamentals knowledge of Theodolite Surveying .

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Course Outcome Mapping with Program Outcome:

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
CO2411.1	3	2	2	2	2	1	1	1	2	1	1	2	1	1	1
CO2411.2	2	2	1	1	1	2	1	1	2	2	2	1	1	1	1
CO2411.3	3	2	2	2	2	1	1	1	2	1	1	2	1	1	1
CO2411.4	2	2	1	1	1	2	1	1	2	2	2	1	1	1	1
CO2411.5	3	2	2	2	2	1	1	1	2	1	1	2	1	1	1
2411 (AVG)	2.6	2	1.6	1.6	1.6	1.4	1	1	2	1.4	1.4	1.6	1	1	1

Course Coverage Module Wise:

Lab No.	Experiments List According to RTU Syllabus
1	To measure the horizontal and vertical angles by Theodolite.
2	To determine the Height of an object by trigonometric leveling (Instruments in same vertical plane).
3	To determine the Height of an object by trigonometric leveling (Instruments in different vertical planes).
4	Measurement of angles, length of survey line using Total Station, finding the coordinate of station
5	To measure and adjust the angles of a braced quadrilateral.
6	To prepare the map of given area by plane tabling.
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Faculty Lab Manual Link

https://drive.google.com/file/d/1RSmacns7p0GGiN3pNXqLjmnSqA_EWXN2/view?usp=sharing

Viva QUIZ Link

1. <https://www.indiabix.com/civil-engineering/advanced-surveying/>
2. <https://www.objectivebooks.com/2016/08/advanced-surveying-objective-questions-and-answers.html>
3. <https://www.objectivebooks.com/2016/11/mcq-on-advanced-surveying-set-02.html>
4. <https://www.grabstudy.com/Civil/Advanced-Surveying.php>

Assessment Methodology:

1. Practical exam using Advance Surveying Lab software.
2. Internal exams and Viva Conduct.
3. Final Exam (practical paper) at the end of the semester.

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