



**COOCH BEHAR PANCHANAN BARMA UNIVERSITY**  
 PANCHANAN NAGAR, VIVEKANANDA STREET, COOCH BEHAR – 736101

SUBJECT: **Bhumi Sahayak / Amin / Surveying: SEC-3**

4 YEAR UG COURSE UNDER NCCF

Bhumi Sahayak / Amin / Surveying : SEC-3			
Course Code:	Course Title: Bhumi Sahayak / Amin / Surveying		
Credits: 02+01	No of Lectures= 30 Hours+10 Hours	Year -2	Semester-III
Full Marks: 50 (Evaluated by External Expert+ Lab Note book + Project+ Attendance)			
Total No. of Lectures-Tutorials-Project (in hours per week): 2-0-1			
<b>A. Programme Objectives:</b> <ol style="list-style-type: none"> <li>Develop Fundamental Knowledge in Traverse and Cross Staff Surveying.</li> <li>Hands-on Experience with Surveying Instruments.</li> <li>Enhance Field Data Collection and Analysis Skills.</li> <li>Foster Real-World Application through Field Projects.</li> </ol>			
<b>B. Programme Outcomes:</b> Upon completion of this course, students will be able to <ol style="list-style-type: none"> <li>Understand and Apply Traverse Survey Techniques.</li> <li>Conduct Cross Staff Surveys Effectively.</li> <li>Perform height and distance by Transit Theodolite and Plotting.</li> <li>Gain Practical Experience in Land Measurement.</li> <li>Analyze and Interpret Survey Data.</li> </ol>			
Unit	Topic (Value in parenthesis indicates Marks)	No. of Lectures	
<b>Unit I</b> <b>Basics of Traverse Survey</b>	1.1 Definition and Objective of traverse. 1.2 Classification of traverse: closed, open traverse 1.3. Methods of traverse based on instrument use: (A).By Chain and compass, (B). By plane table, (C) By theodolite. (5 Marks)	6	
<b>Unit II</b> <b>Cross Staff Survey</b>	2.1. The objective of Cross Staff Survey 2.2. General principles: i) right-angled triangle method ii) trapezoid method. 2.3. Booking field notes in the field book and Plotting the boundary of a field or plot and determination of its area using i) Cross staff, ii) Chain / tape, iii) Ranging rods, iv) plumb bob, v) Peg, vi) arrow and d) offsets; etc. (15 Marks)	12	
<b>Unit III</b> <b>Determination of height and distance by Transit Theodolite</b>	3.1. Introduction to theodolite and its uses; Types of theodolite and components of transit theodolite; Terms related to theodolite; Temporary adjustment of theodolite 3.2. Determination of Height and distance of accessible base and plotting. 3.3. Determination of Height and distance of inaccessible base by same vertical method and plotting. (15 Marks)	12	
<b>Unit IV</b> <b>Project</b>	<b>Case Study:</b> Students visit a land and revenue office to gain hands-on experience in land-related measurements, the procedure of land mutation, and the process of preparing a Khatian. They also go into the field with a Mouza map to identify the land and its boundaries and locate the field points by handheld GPS. They will prepare a sketch map of the land they have identified. (10 Marks)	10	

**Suggested Reading:**

- Basak, N N (2017). Surveying & Levelling 2/E, McGraw Hill Education, Noida, Uttar Pradesh
- Gangopadhyay, Arun (2018): Amin Survey || NSQF Level - 3, Sector - Construction (Paperback, Bengali)
- <https://webscte.co.in/assets/dvet/Amin%20Survey.pdf>
- Pal Subir, Kumar, (2018): Guide to Land Survey Procedure (In Bengali), Kamal Law House, India