

*Office of the Principal*  
**PANDU COLLEGE**

Guwahati-781012

E-mail: panducollegepc@gmail.com

Website: www.panducollege.org

Tel-0361-2570450

Dr. Chandana Sinha Roy, M.A. Ph. D  
Principal(i/c)

Date: 25.07.2023

PC(G)/Admission/Add-On/2023/01

## ADMISSION NOTIFICATION

Applications are invited for admission into the following Add-On Course at Pandu College for the Academic Session 2023-24.

Courses	Course Duration	No. of seats	Admission Fee (in Rs.)	Eligibility	Contact No of Course Coordinator
Certificate Course in Remote Sensing, GIS and GPS Application for Micro Level Land Survey	6 months	20	1000.00 For Pandu College Students	Graduation from any stream (B.A./B.Sc./B.Com./B.Tech./B.E.) with basic knowledge of computer	9864190982
			1200.00 For outside students		

Note:

1. The above-mentioned course is **SELF-FINANCING**. Hence, no free admission will be applicable.
2. Regular attendance is mandatory to appear in the course examination.

**Terms and conditions framed by the Pandu College time to time (if necessary) will be applicable for running and managing the courses.**

The students have to bring all documents of previous examination e.g. Marksheet, Certificate, Registration card etc. in original along with them at the time of Admission.

### Important Dates-

**Online Application Submission: 25.07.2023 to 05.08.2023**

**Publication of selected list of candidates: 07.08.2023**

**Date of admission: 10.08.2023 (10.30 AM onwards)**

**Date of commencement of class will be notified later on**

*Dr. Chandana Sinha Roy*  
Principal (i/c)  
Pandu College, Pandu  
Principal I/C  
**PANDU COLLEGE**  
Guwahati-12, Assam

SYLLABUS FOR  
SIX MONTHS DURATION CERTIFICATE COURSE

COURSE NAME: REMOTE SENSING, GIS  
AND GPS APPLICATION FOR MICRO LEVEL LAND SURVEY

Department of Geography: Pandu College

Sl.No.	Course Contents	Credits: 4+2=6	No. of class	Marks
<b>MODULE 1</b>	<b>Introduction and Concept of Remote Sensing</b>		8	05
Lesson 1:	1.1 Definition and Concept of Remote Sensing			
	1.2 History of Remote Sensing			
	1.3 Types of Remote Sensing: Active and Passive; Sensors and Platforms			
Lesson 2:	<b>Fundamentals of Aerial photograph and Satellite Imageries</b>		8	05
	2.1 Concept of Aerial RS and Types of Aerial Photograph			
	2.2 Aerial Cameras, Sensors and Concept of Photogrammetry			
	2.3 Photographic Scale and Ground Coverage of Aerial Photograph			
Lesson 3:	<b>Process of Remote Sensing: Energy Sources and Interaction</b>		16	10
	3.1 Sources of Energy			
	3.2 Energy Interaction with Atmosphere			
	3.3 Data Acquisition: Image Processing and Interpretation			
	3.4 Advantages of Remote Sensing			
	3.5 Limitation of Remote Sensing			
Lesson 4:	<b>Image Interpretation</b>		5	10
	4.1 Rasterization and Vectorization			
	4.2 Band Combination: Use on Cultural and Physical Features			
<b>MODULE 2</b>	<b>Introduction to the Concept of GIS</b>		25	20
Lesson 1:	1.1 Definition and Development; Components of GIS			
	1.2 Data Types and Input: Spatial and Non-spatial, Storage, Maintenance, Manipulation, Analysis and Output			
	1.3 Geographic Information: Vector, Raster Data Models			
	1.4 Integration of Remote Sensing Data and GIS			
	1.5 Softwares: Open and Licensed			
	1.6 Introduction to Arc GIS Desktop: Arc Map, Arc Catalogue, Arc Toolbox.			
	1.7 Data Base, Attribute Table and Queries, Application and Limitations of GIS			
Lesson 2:	<b>Coordinate System, Map Projection and Datum System</b>		12	10
	2.1 Introduction Coordinate System, Projection System and Datum System			
	2.2 Coordinate System			
	2.3 Datum			
	2.4 Projection Specification			
Lesson 3:	<b>Digital Image Processing</b>		16	15
	3.1 Introduction to Digital Image			
	3.2 Image Restoration, Geo-referencing, Rectification, Resolution,			
	3.3 Color Compositing (FCC)			
	3.4 Image Enhancement and Manipulation			
	3.5 Digital Elevation Model (DEM)			

Lesson 4:	<b>Image Classification</b>		
BB	4.1 Supervised Classification	6	05
	4.2 Unsupervised Classification		
Lesson 5:	<b>Map Production</b>		
RK	5.1 Importing Coordinate system	12	05
	5.2 Symbolology, Re-classify,		
	5.3 Design and Layout		
	5.4 Export and Import		
<b>MODULE 3</b>	<b>Introduction to Concept of GPS</b>		
Lesson 1 SD	1.1 Definitions and Working Principles of GPS; DGPS Basics	16	15
	1.2 An Introduction to Hardware items-Data Ports, Interface Cables and Relevant Accessories		
GD	1.3 Data Transfer Mode and Techniques		
	1.4 Adding Attribute to the Features		
	1.5 GPS Data Transfer to Computer for Mapping in GIS Environment		
	1.6 Cartographic Display and Mapping		
Lesson 2	<b>Surveying with GPS: Hands on Experience</b>	20	50
BB	2.1 Surveying the Nodal Features		
	2.2 Surveying the Linear Features		
	2.3 Surveying the Polygon Features		
	2.4 Surveying and Mapping Land Parcel		
Lesson 3	<b>RS, GIS and GPS Based Project Work on Selected Field Area</b>	24	
AI	3.1 Application of RS and GIS on Cultural and Physical Features, Thematic Mapping, Management Based Analysis, Change Detection Zoning, NDVI, DEM, RUSSEL, Monitoring Urban Growth, Solar Radiation Index, Wet Index. <b>Drone Basic,</b>		
	3.2 Applications of GIS and GPS: Field Base GPS Based Project Work on Selected Study Area (Practical)		
	<b>Total Class/Total Marks</b>	<b>168</b>	<b>150</b>

<i>Duration of Theory Classes</i>	<i>1 Hour</i>	<i>Duration of Practical Classes</i>	<i>1 Hour 45 Minutes</i>
<i>Duration of Examination(Theory)</i>	<i>2 Hours</i>	<i>Duration of Practical Exam.</i>	<i>4 Hours</i>

Approved By: NB: 1. 1st Mid term Examination (Theory+Practical) 30+20 = 50

2. 2nd and Final Examination (Theory + Practical) 30+20 = 50

3. Project Work -

50



**Attendance Sheet: Session: August, 2023 To January, 2024**  
**Certificate Course on RS, GIS and GPS Application for Micro Level Land Survey**  
**Dept. of Geography, Pandu College**

Month: 23/07/23 ~~24/07/23~~

Roll no	Name (BLOCK LETTER)	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Remarks
		TUE	THU	SAT	TUE	THU	SAT	TUE	THU	SAT	TUE	THU	
	NOMITA GOGOI		P	P		.	P	P	.				P
	JAYSHREE DAS		P	P		P	P	P	P				P
	DOLLY RAJBONGSUI		P	P		P	P	P	P				P
	SUMI KALITA		P	P		P	P	P	P				P
	SUMITA DEKA		P	P		P	P	P	.				P
	RAKTIMASARMA		P	P		P	P	P	P				P
	ANKITA KALITA		P	P		P	P	P	P				P
	RAHANA PARBIN		P	P		P	P	P	.				P
	HIYA NATH		P	P		P	P	P	.				P
	DARSHITA BHATTA		P	P		.	P	P	P				P
	SNEHASHISH CHOUDHURY		P	P		.	P	P	.				P
	ANVJ DAS		P	P		.	P	P	P		P		P
	RANJU DAS					P	P	P	.		P		P
	SAGAR SARKAR					P	P	P	.				P
	TAHANNA PANDIT					P	P	P	.				P
Name/Sign. of the Teacher:			BB	ch		BB	BB	BB	BB				BB

Course Coordinator



GPS Map Camera

Guwahati, AS, India

Mali Gaon, Guwahati, 781011, AS, India

Lat 26.165745, Long 91.691381

07/03/2023 12:37 PM GMT+05:30

Note : Captured by GPS Map Camera





**GPS Map Camera**

**Guwahati, Assam, India**

5M8R+4C6, Pandu Port Rd, Pandu College Gate, Maligaon, Guwahati, Assam 781012, India

Lat 26.165702°

Long 91.691413°

27/01/24 01:19 PM GMT +05:30



Google

# PROJECT REPORT

ON

MORPHOMETRIC ANALYSIS OF KOHORA RIVER BASIN, ASSAM



This Project Report has been submitted to the Department of Geography, Pandu College, for the Partial Fulfilment of Certificate Course (Add-On) on RS, GIS and GPS Application for Micro Level Land Survey, 2023

Submitted by

Name: Snehasish Choudhury

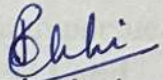
Enrolment No...018..

2023(01)



## CERTIFICATE

This is to certify that **Mr. Snehasish Choudhury** is a student of the **Certificate Course (Add-On) on RS, GIS and GPS Application for Micro Level Land Survey, 2023 in Pandu College**. He has prepared a report entitled "**Morphometric analysis of Kohora river**". This report is not published in any form in any institute for any degree. This study is based on his own knowledge and observation.

  
Teacher in charge



## **REPORT WITH OUTCOME**

The course successfully achieved its goals, with participants demonstrating enhanced proficiency in using remote sensing, GIS, and GPS technologies for land survey applications. Feedback from participants highlighted an increase in their confidence in handling geospatial data and their ability to apply these skills in professional land surveying and mapping tasks. Many participants expressed interest in further specialization, with several noting the practical applications of these technologies in areas such as urban planning, environmental management, and agriculture.

The certificate course in "Remote Sensing, GIS, and GPS Application for Micro-Level Land Survey" has equipped professionals and aspiring surveyors with essential skills to meet the growing demand for accurate and efficient land surveys. The integration of remote sensing, GIS, and GPS provides a powerful toolkit for modern surveyors to conduct precise and comprehensive micro-level surveys, making significant contributions to a wide range of fields.



Dr. Niranjana Bhattacharjee  
Course Coordinator