

**Short Course on Remote Sensing and GIS in Climate and Water Management -2025**  
**19th-23rd May, 2025**

**Draft Programme Schedule**

**Day 1: Introduction to Remote Sensing and GIS concepts**

Lect.	Time	Topic	Resource Person
	09:30AM-10:00AM	Registration and Inauguration	
	10:00AM-10:30AM	Tea break	
1	10:30AM-11:30AM	Principles of Remote Sensing	Prof. G.M. Tarekul Islam
2	11:30AM-12:30PM	Addressing Water Challenges through RS-GIS	Prof. Mashfiqu Salehin
	12:30PM-02:00PM	Lunch and Prayer break	
3	02:00PM-03:00PM	Introductory Lab Session: Principles of GIS (Hint: Orientation with GIS tools)	Dr. Sonia Binte Murshed, Ms. Zarin Tasnim
	03:00PM-03:30PM	Tea break	
4	03:30PM-04:30PM	Types and Sources of RS-GIS Data	Dr. Shammi Haque
5	04:30PM-05:30PM	Hands-on: Geodatabase handling and visualization (Hint: Extract shapefiles, Overlay data, Work with attribute tables, making charts and mapping)	Dr. Shammi Haque, Ms. Zarin Tasnim, Ms. Nusaiba Nueri Nasir

**Day 2: Techniques of Remote Sensing and Geographic Information System**

Lect.	Time	Topic	Resource Person
6	09:30AM-10:30AM	Earth Observation Systems	Dr. Shampa
	10:30AM-11:00AM	Tea break	
7	11:00AM-12:00PM	Hands-on: Georeferencing (Hints: map projections, transform coordinate system)	Prof. Sara Nowreen, Ms. Mushrufa Mushreen Winey
8	12:00PM-01:00PM	Hands-on: Spatial analyst (Hint: raster data handling and digital Terrain Mapping)	Prof. Sara Nowreen, Ms. Nusaiba Nueri Nasir
	01:00PM-02:00PM	Lunch and Prayer break	
9	02:00PM-03:00PM	Hands-on: Surface hydrologic analysis using GIS (Hint: watershed delineation)	Prof. Sara Nowreen, Ms. Zarin Tasnim, Ms. Mushrufa Mushreen Winey
	03:00PM-03:30PM	Tea break	
10	03:30PM-04:30PM	Hands-on: Application of GIS (Hints: Rainfall Isohyetal and Contour maps, Thiessen Polygon)	Prof. Sara Nowreen, Ms. Mushrufa Mushreen Winey
	04:30PM-05:30PM	Group Presentation	

**Day 3: Techniques of Remote Sensing and Geographic Information System (contd.)**

Lect.	Time	Topic	Resource Person
11	09:30AM-10:30AM	RS-GIS Application in Water Pollution Management	Prof. Mohammed Abed Hossain
	10:30AM-11:00AM	Tea break	
12	11:00AM-12:00PM	Application of Planform Analysis using satellite images	Prof. Md. Munsur Rahman
13	12:00PM-01:00PM	Hands-on: Digital image processing I (Hint: Reflectance and Spectral Band Combinations)	Dr. Shampa, Ms. Zarin Tasnim, Ms. Mushrufa Mushreen Winey
	01:00PM-02:00PM	Lunch and Prayer break	
14	02:00PM-03:00PM	Hands-on: Digital image processing II (Hint: planform analysis)	Dr. Shampa, Ms. Nusaiba Nueri Nasir
	03:30PM-04:00PM	Tea break	
15	04:00PM-05:00PM	Group Presentation	

**Day 4: Advanced Applications of Remote Sensing and GIS in Water Management**

Lect.	Time	Topic	Resource Person
	09:30AM-10:30AM	RS-GIS for Climate Change Impact Analysis and Adaptation	Prof. A.K.M. Saiful Islam
	10:30AM-11:00AM	Tea break	
1	11:00AM-12:00AM	Open-source data for advanced-level GIS application	Dr. Shammi Haque
2	12:00PM-1:00PM	Earth Observation Systems: Interferometry I	Dr. Shampa
	1:00PM-02:00PM	Lunch and Prayer break	
3	02:00PM-03:00PM	Earth Observation Systems: Interferometry II	Dr. Shampa
	03:00PM-03:30PM	Tea break	
4	03:30PM-04:30PM	Hands-on: GEE and Python in the application of RS-GIS	Prof. Sara Nowreen, Ms. Zarin Tasnim, Ms. Mushrufa Mushreen Winey
5	04:30PM-05:30PM	Hands-on: Flood inundation using Sentinel in GEE platform	Dr. Shampa, Prof. Sara Nowreen, Ms. Nusaiba Nueri Nasir

**Day 5: Advanced Techniques of Remote Sensing and Geographic Information System**

Lect.	Time	Topic	Resource Person
6	09:30AM-10:30AM	Machine Learning in downscaling GRACE/GLDAS data	Prof. Sara Nowreen
	10:30AM-11:00AM	Tea break	
7	11:00AM-12:00PM	Hands-on: Machine Learning in LULC prediction	Prof. Sara Nowreen, Ms. Zarin Tasnim, Ms. Nusaiba Nueri Nasir
8	12:00PM-01:00PM	Climate Change Monitoring Using Remote Sensing and Modeled Data	Prof. Sara Nowreen, Ms. Zarin Tasnim
	01:00PM-02:30PM	Lunch and Prayer break	
9	02:30PM-03:30PM	Hands-on: Visualizing Global Climate Projection datasets in R platform	Prof. Sara Nowreen, Ms. Zarin Tasnim, Ms. Mushrufa Mushreen Winey
	03:30PM-04:00PM	Tea break	
10	04:00PM-05:00PM	Course Evaluation and Certificate Awarding	