NITTE
(Deemed to be University)
Where there is space for every dream

Department of Public Health,
Nitte Institute of Allied Health Sciences

is organizing

A Three-Day Hands-on National Workshop on

Geographic Information Systems (GIS) and Spatial Data Analysis Using R

For Healthcare Professionals, Urban Planners and Researchers

24-26 November 2026

Medical Education Unit,
KS Hegde Medical Academy,
Deralakatte, Mangaluru



ABOUT THE WORKSHOP

Spatial epidemiology is an essential discipline that enables researchers, public health professionals and policymakers to analyse the geographic distribution of diseases, identify high-risk areas and make data-driven decisions for health interventions.

With the increasing availability of geospatial data from sources such as satellite imagery, census records and health facility databases, there is a growing need for professionals to acquire the skills to process, analyse and interpret spatial data.

This workshop is designed to equip participants with foundational and advanced methods in spatial epidemiology using **R**, arguably the most powerful open-source statistical programming language and GIS tool.

R has emerged as a versatile tool for epidemiological research, offering a comprehensive suite of geospatial analysis packages. Unlike proprietary GIS software, R provides greater flexibility, reproducibility and the ability to integrate with other epidemiological modelling frameworks.

WHAT THE WORKSHOP COVERS

This three-day workshop follows a structured curriculum that progressively builds skills in GIS, R and their application to spatial epidemiology.

Each day consists of lectures, hands-on exercises and group activities to reinforce learning.

- Fundamentals of Spatial Data and R
- Concepts in Spatial Data Manipulation and Visualization
- Applying Spatial Statistics and Clustering Methods
- Health Facilities and Geographic Accessibility
- Spatio-Temporal Analysis

OUR GIS JOURNEY

This national workshop builds on a series of GIS training by the Department of Public Health at Nitte.

It began with a simple aim of teaching GIS to students. The first GIS workshop was held in October 2017, followed by an intermediate workshop in October 2018. A three-day hands-on QGIS workshop followed in March 2023.

Since then, the department has held GIS workshops every year, both at Nitte and at other institutions. This year the workshop moves from point-and-click GIS to **R**.

REGISTER NOW

Three-Day Hands-On Workshop

24, 25 & 26 November 2026

Limited to 40 Seats

Last Date for Registration: 10 November 2026

Registration Cost:

- Bachelor's, Master's & full-time PhD Students: INR 3,000; Group participation (3 or more): INR 2,500 per person
- Faculty/Researchers: INR 3,500; Group participation (3 or more): INR 3,000 per person

RESOURCE PERSONS



Prof. (Dr.) Biju Soman MBBS, MD, DPH, MSc, DLSHTM
Professor
Achutha Menon Centre for Health Science Studies
SCTIMST, Thiruvananthapuram



Prof. (Dr.) Mackwin K D'Mello MPH, PhD
Professor
Department of Public Health, NIAHS
Nitte (Deemed to be University), Mangaluru



Dr. Narayanan SB MVSc, PGD (Veterinary Forensic Medicine)
Doctoral Research Fellow (Veterinary Public Health & Epidemiology)
Kerala Veterinary and Animal Sciences University (KVASU)
Former Joint Secretary, Indian Veterinary Science Association, Kerala

CO-FACILITATORS



Mr. Vishnu VS MSc Applied Statistics
Research Associate
Achutha Menon Centre for Health Science Studies
SCTIMST, Thiruvananthapuram



Dr. Ashith PC BAMS, MPH
Freelance Public Health Specialist
Alumnus, Department of Public Health
Nitte (Deemed to be University), Mangaluru

Who Should Attend?

Open to all Bachelors', Masters' Students, Research Scholars and Professionals, including:

- Researchers interested in health and in integrating spatial methods into their studies
- GIS specialists who want to apply their expertise in epidemiology and health-related research
- Researchers, scholars and scientists working in health policy and disease surveillance
- Students and professionals from any other discipline looking to develop expertise in geospatial analysis using R

What to Bring

A laptop (Windows 11, or macOS 12 or later; at least 8 GB RAM) with R and RStudio installed. An installation guide and package list will be shared with registered participants. No prior coding or GIS experience is needed.

For Registration and Queries.
Contact: +91 882 822 4857 (Prajwal Jupiter Lobo) | Email: publichealthworkshops@gmail.com/ gisnpublichealth@gmail.com
Workshop Coordinator: Prof. (Dr.) Mackwin D'Mello; Mob: +91 98444 60590
Department of Public Health, NIAHS, Nitte (Deemed to be University), Deralakatte, Mangaluru 575018 | www.nitte.edu.in

Program Schedule

DAY 1 | Tuesday, 24 November 2026 Foundations: from R to Your First Maps		
Time	**Session**	**Format / Faculty**
08:30 – 09:00	*Registration & Breakfast*	
09:00 – 10:00	Use of GIS in Public Health	Prof. (Dr.) Mackwin D'Mello
10:00 – 10:30	Finding Shapefiles	Dr. Ashith PC
10:30 – 11:00	Inauguration	Inaugural function
11:00 – 11:15	*Refreshing Break*	
11:15 – 12:15	The Need for Responsible and Reproducible Research in the Digital Era & the Fundamental Ideas of GIS	Prof. (Dr.) Biju Soman
12:15 – 13:00	Getting Started with R and RStudio	Dr. Narayanan SB & Mr. Vishnu VS
13:00 – 13:30	*Lunch Break*	
13:30 – 14:30	Fundamentals of R and RStudio	Prof. (Dr.) Biju Soman & Dr. Narayanan SB
14:30 – 15:30	Basics of R-GIS	Prof. (Dr.) Biju Soman
15:30 – 16:00	Practice Session on R-GIS	Prof. (Dr.) Biju Soman, Dr. Narayanan SB & Mr. Vishnu VS
16:00 – 16:30	*Refreshment Break*	

DAY 2 | Wednesday, 25 November 2026 Disease Mapping & Spatial Analysis		
Time	**Session**	**Format / Faculty**
08:30 – 09:00	*Breakfast*	
09:00 – 09:30	Recap of Day 1	Participants
09:30 – 10:30	Spatio-Temporal Mapping of Diseases or Health Events (Plotting Maps, Choropleth Mapping, Attribute Data)	Prof. (Dr.) Biju Soman
10:30 – 10:45	*Refreshing Break*	
10:45 – 13:00	Exercise on Spatio-Temporal Mapping of Diseases or Health Events	Prof. (Dr.) Biju Soman & Dr. Narayanan SB
13:00 – 13:30	*Lunch Break*	
13:30 – 15:00	Advances in Spatial Statistics (Point Pattern Analysis, Areal Data Analysis, Geographically Weighted Regression, etc.)	Prof. (Dr.) Biju Soman
15:00 – 16:00	Practice Session: Advanced Spatial Statistics & How to Report a Spatio-Temporal Analysis in a Research Paper	Prof. (Dr.) Biju Soman, Dr. Narayanan SB & Mr. Vishnu VS
16:00 – 16:30	*Refreshment Break*	

DAY 3 | Thursday, 26 November 2026 Raster Analysis & Publishing in GIS		
Time	**Session**	**Format / Faculty**
08:30 – 09:00	*Breakfast*	
09:00 – 09:30	Recap of Day 1 & Day 2	Participants
09:30 – 10:30	Digitization & Analysis of Raster Data Files	Prof. (Dr.) Biju Soman
10:30 – 10:45	*Refreshing Break*	
10:45 – 12:30	Practice Session: Raster Data Analysis	Prof. (Dr.) Biju Soman & Dr. Narayanan
12:30 – 13:00	Publishing etiquette in GIS	Prof. (Dr.) Biju Soman
13:00 – 13:30	*Lunch Break*	
13:30 – 15:00	Practice Session: Publishing etiquette in GIS	Prof. (Dr.) Biju Soman, Dr. Narayanan SB & Mr. Vishnu VS
15:00 – 16:00	Valedictory Program	
16:00 – 16:30	*Refreshment Break*	