GEOGRAPHIC INFORMATION SYSTEM

PROF. BHARATH H AITHAL
Department of Design Engineering
IIT Kharagpur

TYPE OF COURSE : Rerun | Elective | PG
COURSE DURATION : 12 weeks (26 July’ 21 - 15 Oct’ 21)
EXAM DATE : 23 Oct 2021

PRE-REQUISITES : Set theory basics, Remote Sensing basics [Not Mandatory]
INTENDED AUDIENCE : Geoinformatics, Urban planning, Civil, Electronics
INDUSTRIES APPLICABLE TO : ESRI, Hexagon Geospatial, SkyMap Global, GISDATA, Digicollect GIS, GIS Maps,

COURSE OUTLINE :
This course targets to introduce and teach students basics of GIS using free and open software. Starting with basics, it would discuss analyzing various issues and criticalities in producing accurate data. The concepts are illustrated with appropriate examples.

ABOUT INSTRUCTOR :
Dr Bharath H. Aithal is currently a faculty at Indian Institute of Technology Kharagpur. He has published 50 Journal papers, 8 Book chapters, 1 Book, 80 Conference proceedings, and 40 Technical reports. He has delivered 18 invited guest lectures in various Indian academic Institutions, Universities, and R and D Organizations.

COURSE PLAN :
Week 1: Introduction to GIS
Week 2: Representing a real world in digitalscape
Week 3: Data types and data models
Week 4: Advanced data models in GIS and Data Generation/Collection/Surveys
Week 5: GIS data quality
Week 6: Global positioning system
Week 7: Database and Database Management System– Introduction
Week 8: Database query and Spatial analysis
Week 9: Basic and Advanced Spatial analysis of data
Week 10: Quantum GIS introduction, Hands on working with maps, data integration, collection, digitization and extraction
Week 11: Hands on data generation and analysis using various sources
Week 12: Data standards and Interoperability WEBGIS through GEOSERVER hands-on tutorials