SPATIAL INFORMATICS

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TYPE OF COURSE: New | Core | UG
COURSE DURATION: 8 weeks (26 Aug’19 - 18 Oct’19)
EXAM DATE: 17 Nov 2019

PRE-REQUISITES: Basic knowledge of Database Management
INTENDED AUDIENCE: CSE, ECE, EE and other Departments (working with Geo-spatial datasets/applications)
INDUSTRIES APPLICABLE TO: IT industries dealing with Geo-Spatial applications/services [e.g. ESRI, Oracle-Spatial, ERDAS Imagine, RMSI, RSI Softech India Pvt. Ltd. etc.]

COURSE OUTLINE:
Spatial Informatics is a multi-disciplinary field and the computer science principles/algorithms are increasingly applied to address various challenges/problems of these large scale spatial datasets. The course will cover different topics in spatial informatics, namely, spatial data models, spatial database, spatial computing and data analysis, spatial data mining, geographical information system (GIS), spatial web services etc. Few case studies will be also discussed to demonstrate the applicability of spatial informatics.

ABOUT INSTRUCTOR:
Prof. Soumya K. Ghosh received PhD and M.Tech degrees from Department of Computer Science and Engineering, Indian Institute of Technology (IIT), Kharagpur. Presently, he is a Professor with Department of Computer Science and Engineering, IIT Kharagpur. Before joining here, he worked for the Indian Space Research Organization in the area of Satellite Remote sensing and Geographical Information Systems. He has more than 200 research papers in reputed journals and conference proceedings. His research interests include Spatial Data Science, Spatial Web Services and Cloud Computing.

COURSE PLAN:
Week 1: Introduction to Spatial Informatics, Spatial Database, Spatial Data Models
Week 2: Spatial Query Processing
Week 3: Spatial Data Management
Week 4: Spatial Networks
Week 5: Spatial Computing, Spatial Analysis
Week 6: Remote Sensing & Geographical Information System (GIS)
Week 7: Spatial Web Services, GML, Spatial Data Infrastructure
Week 8: Geo-Visualization, Spatial Cloud