Course title: Geocomputation			
Course code: NRG 167	**No. of credits:** 3	**L-T-P:** 23-7-30	**Learning hours:**45

Pre-requisite course code and title (if any): NRG172, NRG163, NRE111	
Department: Department of Natural and Applied Sciences	
Course coordinator: Dr. Ayushi Vijhani	**Course instructor**: Dr Adil Masood
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Course type: Elective	**Course offered in:** Semester 3

Course Description

The volume and complexity of available spatial data are many times difficult to analyze using traditional analytical modeling methods. Therefore, there is an increasing need to exploit the power of computational environments to analyze geographic phenomena with a minimum of simplifying assumptions. This course provides introduction to the use of computational intelligence methods for exploring, analyzing, modeling and simulating geographic phenomena. Techniques discussed include spatial optimization, pattern recognition, machine learning techniques and simulating complex spatiotemporal systems. Four major areas of geocomputation are discussed in this course.

Course objectives

1. To understand advanced techniques useful for pattern recognition in remotely sensed data.
2. To develop knowledge of tools, techniques, and methods used in spatial simulation
3. To develop skills on applications of spatial optimization techniques for problem solving
4. To understand spatio-temporal models for gridded image time series