Geocomputation: Spring 2014
Department of Geography, University of Utah

GEOG 6010 4 Units

Course: GEOG 6010, 4 Units
Instructor: Matthew Connolly Ph.D.
Day & Time: Tuesday, 6:00 PM to 9:00 PM
Location: OSH 273

Prerequisites: MATH 1210 or equivalent knowledge of basic calculus.

Course Description:
The increasing volume and complexity of available digital geographic data overwhelms traditional analytical modeling methods. Alternatively, we can exploit the increasing power of computational environments to analyze geographic phenomena with a minimum of simplifying assumptions. This course is a high-level introduction to the use of computational intelligence methods for exploring, analyzing, modeling and simulating geographic phenomena. Techniques discussed include heuristic search in spatial optimization, pattern recognition and machine learning techniques and simulating complex spatio-temporal systems.

Who is this course for?
This course is intended for graduate students in Geography or related disciplines that want to advance their understanding of the computational methods used to process large and complex geospatial datasets. Course topics will include cellular automata, agent based models, self organizing maps, and spatial datamining techniques among others. Students in this course will gain exposure to the theoretical underpinnings of geocomputational methods, as well as hands-on experience applying the techniques discussed in lecture. Additionally, students enrolled in this course will complete a research project that applies a geocomputational method to the topic of their choice.