MAP   Mapping

MAP 671 INTRODUCTION TO NEW MAPPING.   (3)
This course introduces students to both the social and technical aspects of digital mapping in the 21st century. Students will learn fundamental concepts and techniques in cartography and GIS, including file types, data classification, projections and coordinate systems and elementary analytical techniques in a range of desktop and web-based mapping platforms. In addition to providing the fundamental technical competencies necessary to create maps, students will develop the critical awareness required to effectively communicate complex social processes through maps.

MAP 672 PROGRAMMING FOR WEB MAPPING.   (4)
This courses introduces students to the fundamental concepts and techniques of web development and computer programming through web mapping. Students will become familiar with current web standards and proficient in manipulating the structural, stylistic and behavioral elements of web maps through programming. Students will translate these practices to achieve objectives in web cartography such as the display of a basemap, the thematic representation of data, and the employment of interaction to enhance visual communication and the presentation of information. Prereq: MAP 671 or consent of instructor.

MAP 673 DESIGN FOR INTERACTIVE WEB MAPPING.   (4)
This course integrates the principles of geographic representation and web programming in order for students to develop high-quality interactive web maps. Students will design interactive web map projects that appropriately represent spatial data in order to serve end-user goals of map engagement and visual communication. The course will train students to compose interactive maps within the context of a coherent web page layout, including the development of supplementary content (such as text and metadata) to aid in visual storytelling. Prereq: MAP 672 or consent of instructor.

MAP 674 SPATIAL DATA ANALYSIS AND VISUALIZATION.   (4)
This course will introduce students to advanced techniques for the quantitative analysis and visualization of spatial data. Students will become familiar with a broad spectrum of data cleaning, transformation, analysis, and visualization techniques helpful for answering in-depth questions based on geospatial data. Students will learn how to prepare raw source data and subsequently apply both global and local spatial analysis techniques, resulting in advanced, interactive data visualizations. Prereq: MAP 672 or consent of instructor.

MAP 675 COLLABORATIVE GEOVIZUALIZATION.   (4)
This course will enable students to build rich, user-centered web interfaces to promote the exploration and understanding of complex spatial datasets. Students will be able to critically engage with a variety of data sources (e.g., public data repositories, crowdsourced or volunteered data) and design interactive cartographic solutions in order to visualize geographic information. Students will be able to augment prototypical 'slippy' web maps through more advanced cartographic enablements and accompany information graphics. Prereq: MAP 673 or consent of instructor.

MAP 695 SPECIAL TOPICS IN DIGITAL MAPPING.   (1-4)
This course offers a combination of readings, discussions, exercises and labs focusing on relevant topics in digital mapping. Course format may range from critical reading of selected literatures to innovative mapping methodologies. Current research developments and technologies in particular digital mapping subfields will be stressed. May be repeated under different subtitles to a maximum of eight credits. Prereq: Consent of instructor.

MAP 698 FINAL PROJECT PREPARATION.   (3)
This course will enable students to design and prepare a web mapping workflow for a project of their own selection. This project is the masterwork for the Master's degree program in digital mapping. Students will determine a geographic problem mapping can address, identify user needs, review relevant literatures, address ethical concerns, collect and prepare the data necessary for the project. Students will also propose strategies for data representation, user interface and online dissemination of the project. This course will culminate with a project design presentation and critique by peers and instructors. Prereq: All other course work toward the Master's degree in digital mapping must be completed.

MAP 699 FINAL PROJECT IMPLEMENTATION.   (3)
This course takes the project design developed in MAP 698 and develops a mapping project based on this outline. Students will conduct data analysis, iteratively review and improve the map user interface, produce written documentation on methods used and findings and engage in intense testing of the mapping solution with peers and targeted end users. At the end of the course, students will make a real time online oral presentation and defense of the project for a committee of faculty members. Prereq: All other course work toward the Master's degree in digital mapping must be completed. With permission of the instructor 699 may be taken concurrently with 698.

KEY: # = new course   * = course changed   † = course dropped

MAP   Mapping

MAP 701 HISTORY OF CRITICAL CARTOGRAPHY.   (2)

This course outlines key moments and arguments in the history of cartography with particular attention to advent of digital mapping and GIScience. Students will review and discuss the epistemological and ontological tensions within the field and practice a range of philosophical approaches to cartographic representation and spatial analysis. Prereq: Consent of instructor.

MAP 719 SOCIAL IMPACTS OF NEW MAPPING.   (3)

This seminar introduces social and cultural issues that have emerged alongside the growth of digital mapping and location based services. It reviews the evolving nature of digital divides, expert versus crowdsourced knowledge, surveillance, privacy and the ethics of big geospatial data collection and use. Students will utilize these discussions of the social impacts of new mapping to challenge and contextualize their own mapping projects. Prereq: MAP 671 or consent of instructor.

KEY: # = new course   * = course changed   † = course dropped