WORLD-CLASS FACULTY

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NEW TECHNOLOGIES FOR NEW MAPS

The maps we use every day are increasingly designed on and for the web. This turn towards interactivity has changed the tools that map-makers must have at their disposal. In addition to knowledge of desktop GIS, today's professional map-maker must be well-versed in Javascript, CSS, and HTML, as well as a growing collection of sophisticated mapping and data visualization libraries and platforms including D3, Leaflet, Carto, Mapbox, and many others. New Maps Plus is distinguished from other online GIS programs in that its primary emphasis is on teaching these new and in-demand skills, using distributed software development practices and protocols, such as Github and Markdown.

University of Kentucky®
College of Arts and Sciences

NEW MAPS PLUS
UNIVERSITY OF KENTUCKY • COLLEGE OF ARTS & SCIENCES

ONLINE MAPPING EDUCATION FOR A NEW ERA OF MAPS

newmapsplus.uky.edu

ALL ABOUT

The New Maps Plus online graduate programs at the University of Kentucky offer a challenging, intensive, digital mapping curriculum that emphasizes the acquisition of technical skills — coding, GIS, web development — while also preparing you to critically address the complexity of today's information ecosystem.

The Department of Geography at the University of Kentucky designed these Graduate Certificate and Master of Science degree programs in digital mapping with all levels of experience in mind. Whether you're new to open source software or an experienced GIS user, you will benefit from a truly unparalleled online learning experience developed by internationally renowned faculty in a top-ranked geography department.

You will develop the technical skills and design fluency you need to make highly sophisticated web maps that are also elegant and impactful. Perhaps even more importantly, you will learn to think critically about the social dimensions of the maps you make and the data from which you make them. Maps, after all, are powerful things: they shape what we see and what we don't, with serious implications for how we come to know the world.

newmapsplus.uky.edu

GRADUATE CERTIFICATE IN
DIGITAL MAPPING

The **Graduate Certificate in Digital Mapping** is a completely online 11-credit graduate certificate that provides students with a rigorous training in the technologies used in contemporary digital mapping practice. The certificate emphasizes both programming and interaction design, ensuring that students emerge from the program well-equipped to make sophisticated, elegant web maps using a variety of platforms. Students that decide to continue their digital mapping education can count all credits earned as part of the graduate certificate toward the Master of Science degree.

COURSES

MAP 671
INTRODUCTION TO
NEW MAPPING
(3 CREDITS)
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, map projections spatial reference 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, using industry-standard practices for distributed software development.

MAP 672
PROGRAMMING FOR
WEB MAPPING
(4 CREDITS)
This course 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 the user's experience with the map.

MAP 673
DESIGN FOR INTERACTIVE
WEB MAPPING
(4 CREDITS)
This course integrates the principles of geographic representation and user interaction to create high-quality web maps. Students will design interactive web maps that visually communicate spatial data and provide an interface for greater user engagement with the map. 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.

MASTER OF
SCIENCE IN
DIGITAL
MAPPING

The **Master of Science in Digital Mapping** is an online 30-credit degree designed for students seeking advanced technical and theoretical training in new mapping. Students will first complete the 11 credits of coursework required for the Graduate Certificate followed by 13 additional credits in which they will significantly expand their skills. Upon completion of this coursework, students will design and implement a capstone project intended to showcase their knowledge and abilities under the supervision of UK faculty.

COURSES

MAP 674
SPATIAL DATA
ANALYSIS AND
VISUALIZATION
(4 CREDITS)
This course introduces 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.

MAP 675
COLLABORATIVE
GEOVISUALIZATION
(4 CREDITS)
This course enables students to build rich, user-centered web interfaces to promote the exploration and understanding of complex spatial datasets. Students will critically engage in a variety of data sources (e.g., public data repositories, crowdsourced or volunteered data) and design interactive cartographic solutions to more effectively visualize geographic information.

MAP 701
HISTORY OF CRITICAL
CARTOGRAPHY
(2 CREDITS)
This course outlines key moments and arguments in the history of cartography with particular attention to the 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.

MAP 719
SOCIAL IMPACTS OF
NEW MAPPING
(3 CREDITS)
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.

MAP 698
FINAL PROJECT
PREPARATION
(3 CREDITS)
This course enables students to design and prepare a web mapping workflow for a project of their own selection. This project is the masterwork for the Master of Digital Mapping degree. Students will determine a geographic problem mapping can address, identify user needs, review relevant literatures, take on ethical concerns and 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.

MAP 699
FINAL PROJECT
IMPLEMENTATION
(3 CREDITS)
This course takes the project design developed in MAP 698 and produces 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.