Geographic Information Systems (GIS) in Libraries

Course Title
Geographic Information Systems (GIS) in Libraries

Course Description
This course will examine issues and topics surrounding the management of map and geospatial data collections and services. Broadly, the course will cover the role of librarians and other information professionals in the world of Geographic Information Systems (GIS). Emphasis will be put on the academic and government setting, but GIS use in industry and other sectors will also be examined. Topics covered in the course will include the history of geographic information sources from paper to digital, GIS reference, critical cartography, geographic Information and map literacy; data acquisition and licensing; open data, open software, and open government; spatial data infrastructure, data archiving, web mapping, and spatial analysis.

While the course will be grounded in academic readings and discussions, practical work will revolve around the use of desktop GIS and mapping software, as well as server side web mapping technology.

Course format
Lecture and class discussion

Course Objectives
Students will:
- Gain an understanding of map and GIS collections and services.
- Learn to use a variety of Geographic Information Systems tools
- Learn the difference between types of geographic information, how to find them, how to use them, and how to critique them
- Be exposed to and appreciate a variety of different types of geographic information that are used for mapping, analyses, and interpretation.

Learning Outcomes
Relationship of GIS in Libraries Learning Objectives to the MI Program Learning Outcomes: GIS and other geospatial technology have become a large part of our everyday lives as nearly 80% of digital data available to us as information users have a geographic component. A course in the fundamentals of geospatial technology and data management will help students understand and be conversant in the practice of the use and organization of this growing body of information and resources. The knowledge and practical experience gained in this course will allow students to acquire technical, intellectual, and leadership skills in the broader digital data economy. Students will express and work toward achieving their own personal goals in this course, and will explore methods for including it as part of their life-long intellectual growth.

Instructor
Marcel Fortin
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Geographic Information Systems (GIS) in Libraries

416.978.1958

Texts and Readings
There is no textbook for this course. Readings will be assigned every week from works either on reserve, on the internet, or through the University of Toronto Libraries’ digital collections. Please note that some of the web links to readings may require you to sign in using your utorid via myaccess. For further information on using myaccess, please see the following web page on the University of Toronto Libraries’ web site: http://discover.library.utoronto.ca/services/my-access/my.access-off-campus-access-to-university-of-toronto-libraries-licensed-resources. All readings listed below are labelled as either required or recommended.

Assignments and Marking
Grades will be based on your performance in the following series of assignments and short essay:

1. Assignment 1 (10%) Maps and map reading skills: History, concepts, interpretation, critique of maps
   Due: September 28th, 2012
2. Assignment 2 (20%) An Introduction to GIS - data: location, retrieval, basic querying, data creation, and cartographic display
   Due: October 19th, 2012
3. Assignment 3 (20%) An Introduction to GIS II - analysis: data manipulation, advanced querying and overlaying, statistical and geometrical calculation, and manipulation.
   Due: November 9th, 2012
4. Assignment 4 (20%) Web mapping: understanding and using web mapping technology
   Due: November 23rd, 2012
5. Research Essay (20%) Topics on issues in GIS librarianship
   Due: December 11th, 2012
6. Class participation (10%)

Office Hours
Tuesdays and Thursdays 9-10AM

Lectures
XXXXXX XX:XX AM/PM – XX:XX AM/PM

Weekly Outline

Week 1
Course Introduction
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Week 2
An Introduction to maps and mapping technology

Topics: A history of cartography; types of maps; uses of maps, critical history of cartography

Readings:

Week 3
GIS Concepts I

Topics: Basic software skills; vector and raster data; basic cartography and geographic output; and basic analysis; Census of Canada

Readings:

Week 4
GIS Concepts II

Topics: Advanced analysis: geospatial analysis; terrain analysis; and geostatistical analysis

Readings:

Week 5
Map & GIS Libraries – Services

Topics: The role for libraries and librarians; reference; research; instruction; and teaching; library education; subject specialty

Readings:
Week 6
Map & GIS Libraries – Collection development
Topics: map and data sources; collection development policies; IT infrastructure; the role of government
Readings:

Week 7
Geospatial Data Description and Preservation
Topics: cataloguing; metadata standards
Readings:

Week 8
Geographic Literacy
Topics: cognitive mapping; numeracy & graphicacy; video games
Readings:
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Week 9
Control and True Costs of Geospatial Data

Topics: Government control of Data; Copyright; licensing and pricing; national geospatial initiatives; data cultures; open data and open government

Readings:


Week 10
Web-based Mapping I

Topics: Google Maps; Google Earth; and OpenLayers

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Week 11
Web-based Mapping II
Topics: ArcServer; Mapserver; web 2.0, Database-driven web-mapping applications, crowdsourcing, and other web mapping technology
Readings:


Week 12
The future of mapping and the future of GIS in Libraries
Topics: future evolution of digital geographic information; course review
Readings:


Late Penalties
5% of the total mark for the assignment will be deducted for every day (including weekend and holidays) that an assignment is late.

Extensions
There will be no extensions to any of the assignments due during this course except for reasons such as medical or serious family emergencies. Please contact the instructor if you wish to discuss a possible extension.

Plagiarism and other Academic Offences
Plagiarism and other academic offences are very serious and could jeopardize your academic career. Refer to the Arts and Science Code of Behaviour on Academic Matters to understand
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what is considered an academic offence and what are the ramifications: [http://www.governingcouncil.utoronto.ca/policies/behaveac.htm](http://www.governingcouncil.utoronto.ca/policies/behaveac.htm)

**Term Paper**
An 6-8 page research paper will be due near the end of the semester. A list of essay topics will be discussed and provided early in the term. Students can also propose an essay topic with the instructor. The term paper is due March 30th, 2011.

**Course Website on Blackboard**
Log into [http://portal.utoronto.ca](http://portal.utoronto.ca) using your UTORid. XXX-XXX should be linked from your main content page. If you need information on how to activate your UTORid and set your password for the first time, please go to [www.utorid.utoronto.ca](http://www.utorid.utoronto.ca).

**Accessibility Needs**
If you have any accessibility needs or issues, please visit [http://studentlife.utoronto.ca/accessibility](http://studentlife.utoronto.ca/accessibility)

**Non-Native Speakers of English**
Non-native speakers of English who have difficulties with writing or communicating in English should visit the following website for assistance: [http://www.writing.utoronto.ca/faqs/english-as-second-language](http://www.writing.utoronto.ca/faqs/english-as-second-language)

**Note**
The instructor reserves the right to modify the topics and schedule during the semester

Last Updated: Friday, May 11, 2012