

journal.

Historical Map Analysis (20%)

Working as individuals you will have the opportunity to choose an archived map from the McMaster Map Collection and discuss the historical significance and explore any unanswered questions the map may have. This will involve the creation of research questions based on the spatial information and a write-up on the importance of the map itself. You will also learn how to geo-rectify a map. With permission of the author the final deliverables will be posted on the McMaster Map Collection website.

Code Red (15%)

As a class we are going to work with the same data used to create the 'Code Red' maps that give a snapshot of the health of the City of Hamilton. Using your knowledge of how to use colours and classification systems to manipulate data you will illustrate through a series of maps how a single data set can be used to creating a seemingly endless number of conclusions to the untrained eye.

Python Coding (5%)

While this is not a class where programming will be emphasized you will be tasked to create, manipulate and run Python Code within ArcGIS. Your deliverable will be the code used and a short write-up.

Public Participation GIS (15%)

The class is going to identify a question on campus they would like answered that involves the collection of primary spatial data. We will go through the process of collecting data and explore the issues that revolve around having numerous data collectors. The deliverable will be a map using the collected data and a written discussion on the difficulties of implementing a PPGIS project.

Participation (15%):

Participation is extremely important for a class such as this. Each week we will be building on the knowledge of the week before making attendance imperative. Each week there will be small deliverables and class discussion that everyone is expected to participate in.

Students will also be given an opportunity to engage in reasoned self- assessment of their participation over the duration of the course. This self-assessment (which will need to be explicitly justified) will count toward 5% of the final participation grade.

Policy Statements

Assignment Deadlines & Missed/Late Work:

Students are expected to hand in all assignments on the specified due dates. Late submissions will be subject to a penalty of **20%** per day (including weekend days). Assignments submitted after the beginning of class on the due date will be counted as one day late. No assignments will be accepted after the last day of classes.

Given that some course assignments require electronic submission, you should familiarize yourself with the Avenue to Learn dropbox in advance of the deadlines, and ask for assistance as necessary. Problems with electronic submission WILL NOT be accepted as an excuse for lateness.

McMaster Student Absence Form (MSAF):

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "Requests for Relief for Missed Academic Term Work." Please also see the MSAF statement on our website (<http://artsci.mcmaster.ca/forms-requests/>) and direct any questions or concerns to Shelley Anderson or Rebecca Bishop in the Arts & Science Program Office as appropriate.

McMaster Policy on Academic Integrity:

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process.

Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences—e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty, please refer to the Academic Integrity Policy, located at: <http://www.mcmaster.ca/academicintegrity>. The following illustrates only three forms of academic dishonesty: 1) Plagiarism—e.g., the submission of work that is not one's own or for which other credit has been obtained. 2) Improper collaboration in group work. 3) Copying or using unauthorized aids in tests and examinations.

Academic Accommodation of Students with Disabilities:

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or email sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities.

Sustainable Written Work Submission Guidelines

The written work submission guidelines for this course have been chosen to support the more sustainable use of paper, energy and toner. Four levels of criteria have been developed by the Office of Sustainability and encouraged for adoption by professors and faculties. The submission guidelines for this course meet the **Platinum** standard. All written work must be submitted in the following format: double-sided pages, reduced line spacing (1.5 lines), exclusion of title page, sans-serif font. Most work will also be submitted and returned online. For more information about criteria for sustainable written work submissions, visit the Office of Sustainability website: www.mcmaster.ca/sustainability

Course Modifications & Email Contact

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of students to check **their McMaster email** and course websites weekly during the term and to note any changes. Announcements will be made in class and by using the course email distribution list.

Course Schedule

Note: all readings should be completed **PRIOR** to the M class on the week for which they are assigned

A. Definitions & Theoretical Approaches

Week 1 (January 7th): No class

- A student may not use the GIS labs until all health and safety regulations in addition to lab rules are discussed in detail with the instructor. Due to this regulation the class will first meet on January 11th during class time.

Week 2 (January 11, 14) introduction: What is Spatial Data?

- Class will go over the rules and regulations of the GIS lab
- Go over the basics of Geographic Information Systems
- **Required Reading:**
 - Maclachlan, J. & Lee, R. (2015). *Student Collaborative Writing Groups: Mapping Glacial Geomorphology and Glacial Sedimentology*. *Cartographica*, 50, 163-164.

Week 3 (January 18, 21): Historical Maps

- Class will meet on January 21 in the Lloyd Reeds Map Collection on the first floor of Mills Library
- **Required Readings:**
 - Explore the Lloyd Reeds Map Collection: <https://library.mcmaster.ca/maps/>. You must come to the Monday meeting with a map from the digital archives you find interesting
 - Explore the City of Hamilton iMapper Program: <http://map.hamilton.ca/iMapper.aspx>

Week 4 (January 25, 28): Open Source Data

- Guest Lecturers: Dr. Jason Brodeur and Vivek Jardon
- Class will meet in the Mills Wong Classroom on January 28
- **Required Readings:**
 - Robinson, A. C., Kerski, J., Long, E. C., Luo, H., DiBiase, D., & Lee, A. (2015). Maps and the geospatial revolution: teaching a massive open online course (MOOC) in geography. *Journal of Geography in Higher Education*, 39(1), 65-82.
 - Explore the Scholars GeoPortal: <http://geo2.scholarsportal.info/>
 - Explore the QGIS Project: <http://www.qgis.org/en/site/>

Week 5 (February 1, 4): The importance of colour and scale

- **Required Readings:**
 - Harrower, M., & Brewer, C. A. (2003). ColorBrewer. org: an online tool for selecting colour schemes for maps. *The Cartographic Journal*, 40(1), 27-37.
 - Nelson, J. K., & Brewer, C. A. (2015). Evaluating data stability in aggregation structures across spatial scales: revisiting the modifiable areal unit problem. *Cartography and Geographic Information Science*, 1-16.

Week 6 (February 8, 11): Health and Social Justice

- **Required Readings:**

- Tanser, F. C., & Le Sueur, D. (2015). The application of geographical information systems to important public health problems in Africa. *International Journal of Health Geographics*, 1(4), 9.
- Maclachlan, J. C., Jerrett, M., Abernathy, T., Sears, M., & Bunch, M. J. (2007). Mapping health on the Internet: A new tool for environmental justice and public health research. *Health & place*, 13(1), 72-86.

Week 7 (February 15): Fall Break – No classes

Week 8 (February 22, 25): Code Red

- Guest Lecturer: Pat DeLuca: Code Red
- **Required Readings:**
 - TBD by guest lecturer

Week 9 (February 29, March 3): Python Coding

- **Required Readings:**
 - Explore the Python for ArcGIS website: <http://resources.arcgis.com/en/communities/python/>

Week 10 (March 7, 10): Social Media and Mapping

- **Required Readings:**
 - Huang, Q., Cao, G., & Wang, C. (2014). From Where Do Tweets Originate?-A GIS Approach for User Location Inference. *IEEE*. (2013).
 - Funayama, T., Yamamoto, Y., Tomita, M., Uchida, O., & Kajita, Y. (2014, November). Disaster mitigation support system using Twitter and GIS. In *ICT and Knowledge Engineering (ICT and Knowledge Engineering), 2014 12th International Conference on* (pp. 18-23).
 - Samet, H., Adelfio, M. D., Fruin, B. C., Lieberman, M. D., & Sankaranarayanan, J. (2013). PhotoStand: A map query interface for a database of news photos. *Proceedings of the VLDB Endowment*, 6(12), 1350-1353.

Week 11 (March 14, 17): Public Participation GIS

- **Required Readings:**
 - Brown, G., & Weber, D. (2011). Public Participation GIS: A new method for national park planning. *Landscape and urban planning*, 102(1), 1-15.
 - Tang, Z., & Liu, T. (2015). Evaluating Internet-based public participation GIS (PPGIS) and volunteered geographic information (VGI) in environmental planning and management. *Journal of Environmental Planning and Management*, 1-18.

Week 12 (March 21, 24): Collaborative Writing Group - Discussion

- **Required Readings:**
 - no required readings

Week 13 (March 28, 31): Student Choice

○ Throughout the semester we will be going over many different ways spatial data and cartography is used. Over the weeks prior to this the class will be prompted to create a reading

list and topics for this week of class. All discussions will be led by the students with the instructor as

a facilitator.

- **Required Readings:**
 - TBD

Week 14 (April 4, 7): Wrap-up and Discussion

○ Students will be given the opportunity to discuss the course and create a class wide reflection on the takeaways of the class and what they will do with the information moving forward.

- **Required Readings:**
 - TBD