Course Instructors | Dr. Robert Way | Email: robert.way@queensu.ca
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Offices | D129 Macintosh-Corry Hall | |
Contact Time | Weekly 3-hour blended lectures-practicums | |
Format | Lectures and lab assignments | |
Class Assessment | Assignments 4 X 18% each | |
 | Paper presentation 1 X 8% each | |
 | In-class participation activities 4 X 5% each | |
 | No Final Exam | |

**COURSE OVERVIEW**
This course presents an overview of methods and theory underlying acquisition, editing, management, analysis, and visualization of different types of data used in research in geographical and environmental sciences. Emphasis will be placed on understanding how research data is conceptualized from the early research questions to the final research products. This course will also survey recent developments in theoretical and methodological frameworks for data collection and analysis in geographical and environmental research. The content discussed in this course will enhance applied and critical skills that will be transferable to private, public, and academic career paths.

**LEARNING OUTCOMES**
- Students will identify historical and new paradigms in data management, visualization, and analysis
- Students will evaluate contemporary debates in data collection, analysis, and ethics
- Students will learn and apply principles of sampling design
- Students will develop independent research evaluation skills
- Students will formulate solutions to real-world problems such as imperfect data availability
- Students will synthesize, communicate, and display data products for academic and public settings.

**COURSE TOPICS**
1. History of data science and methods
2. Bias, ethics, and geographic data
3. Research and sampling design
4. Evaluating data in the context of academic literature
5. Acquisition of 'field' or remotely sensed data
6. Realities of research data acquisition
7. Management of geographic data
8. Visualization and presentation of data

**COURSE READINGS**
There is no required textbook for this class. However, multiple readings in the form of blogs, book chapters, news articles, and/or peer reviewed journal articles will be assigned each week.

Disclaimer: Not a final version. Content subject to change.