



**The University of Western Ontario  
HISTORY 9877A**

**Digital Research Methods**

**Fall 2018-19**

**Tuesdays and Thursdays 6:30-8:30pm, LwH 2270C**

**Instructor: Professor William J. Turkel**

Office Hours: by appointment

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**Course Description:**

Historical research now crucially involves the acquisition and use of digital sources. In History 9877A, students will learn to find, harvest, manage, excerpt, cluster and analyze digital materials throughout the research process, from initial exploratory forays through the production of an electronic article or monograph which is ready to submit for publication.

**Course Syllabus:**

Why should you take a course in digital research methods?

1. You've just returned from a whirlwind trip to the archives. On your laptop you have about nine thousand digital photographs of various documents. You could spend the next few years going through the pictures one at a time and typing notes into a word processor. Or you could write a small script to convert each image into readable text and drop the whole batch into a custom search engine. In less than an hour you could be searching for words and phrases anywhere in your primary sources.
2. You discover that the Internet Archive has a collection of eight hundred online texts that are directly related to your research. You could look through the list of titles in your web browser and click on the links one at a time, scanning each to see if it is relevant. Even if you cut-and-paste notes from the sources to a word processor, it will still take you at least a few months to go through the collection. Or you could write a small script to download all of the sources to your own machine and run a clustering program on them. This sorts the texts into folders of closely related documents, then subdivides those by topic. In less than an hour, you would be able to visualize the contents of the whole collection and focus in on the topics that are of immediate interest to you.
3. You've been working with the written corpus of a historically significant figure. You have the books and essays that he or she wrote, their diary entries and their correspondence with a large number of other individuals. How do you make sense of a lifetime of writing? Can you chart important changes in someone's conceptual world? Spot the emergence of new ideas in the discourse of a community? Map the ever-changing social relations between a network of correspondents?

In this course you will learn to apply techniques that are currently used by fewer than one percent of working historians. Computation won't magically do your research for you, but it will make you *much* more efficient. You can focus on close reading, interpretation and writing, and use machines to help you find, summarize, organize and visualize sources.

### **Course Materials:**

To get the most out of this class, you will need a Windows, Mac or Linux laptop, which you should bring to every class.

You should purchase a student **desktop** license for Wolfram Research's *Mathematica* software. (Don't let the name scare you, you won't need any particular training in mathematics to do well in the class).

<http://www.wolfram.com/mathematica/pricing/students.php>

You can purchase the license for the semester, for the year or permanently. If you are unwilling or unable to purchase the software, please do not take this course.

All other course materials will be made freely available online.

### **Methods of Evaluation:**

There are no prerequisites for the course other than a willingness to learn new things and the perseverance to keep working when you're confused or when you realize that you could spend a lifetime learning about the topics and technologies that we will cover in class, and still not master them all. Students will come into the course with very different levels of experience and expertise. Some, probably most, will be familiar only with the rudiments of computer and internet use. A few may already be skilled programmers.

This course also requires that you spend at least a little bit of time each day (say 20-30 minutes) practicing your new skills. It's a lot like learning a new language, learning to play a musical instrument or going to the gym. It is going to be hard at first, but be patient with yourself and ask a lot of questions. With daily practice, you will soon find ways to do your research and coursework faster and more efficiently. If you can't commit to regular practice, however, you should probably not take this course. The techniques that you learn in this class build cumulatively week-by-week. In addition to regular practice, it is essential that you attend every meeting of the class and do the readings carefully.

Every student in the class will have an academic blog and will be required to make weekly or biweekly posts to it. These entries do not have to be long (300-500 words per week is ample). The use of blogging is to encourage you to engage in 'reflective practice,' that is, to force you to think about your learning and research as you are doing it. It also provides me with feedback for how the course is going. You can use each blog entry to talk about what you learned, things that were clear or not, things you would like to know how to do, and so on.

If you do not already have a professional blog you will need one. Before the first class you should go to either WordPress or Blogger (not both) and create an account and a blog. If possible, create the blog under your own

name; if not, choose something professional sounding. Post an introductory message about yourself and then send me the URL of your blog so that I can add you to the course blogroll for History 9877A.

You will be graded on your participation in class (20%) and on your reflective blogging (80%). There will be no midterm or final examinations, and no final paper.

### **Course Schedule and Readings:**

Here are the topics that we will be covering:

- Introduction
- Word frequency
- Text search
- N-gram frequency
- Keyword in Context (KWIC)
- Pattern matching
- Capitalized phrases
- Collocations
- Associations
- Named entities
- Timelines
- Maps
- Batch downloading
- Corpus search
- Document vectors
- TF-IDF
- Markup languages
- Scraping
- Page images and OCR
- Image processing
- Identifying and classifying images
- Photogrammetry and georectification
- Application Program Interfaces (APIs)
- Entity network spidering

### **Additional Statements**

#### ***Academic Offences:***

Scholastic Offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitute a Scholastic Offence, at the following Web site:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

### ***Accessibility Options:***

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519 661-2111 x 82147 for any specific question regarding an accommodation. Information regarding accommodation of exams is available on the Registrar's website:

[www.registrar.uwo.ca/examinations/accommodated\\_exams.html](http://www.registrar.uwo.ca/examinations/accommodated_exams.html)

### ***Medical Issues***

The University recognizes that a student's ability to meet his/her academic responsibilities may, on occasion, be impaired by medical illness. Please go to:

[https://studentservices.uwo.ca/secure/medical\\_accommodations\\_link\\_for\\_OOR.pdf](https://studentservices.uwo.ca/secure/medical_accommodations_link_for_OOR.pdf)

to read about the University's policy on medical accommodation. This site provides links to the necessary forms. In the event of illness, you should contact Academic Counselling as soon as possible. The Academic Counsellors will determine, in consultation with the student, whether or not accommodation should be requested. They will subsequently contact the instructors in the relevant courses about the accommodation. Once the instructor has made a decision about whether to grant an accommodation, the student should contact his/her instructors to determine a new due date for tests, assignments, and exams.

Students must see the Academic Counsellor and submit all required documentation in order to be approved for certain accommodation: [http://counselling.ssc.uwo.ca/procedures/medical\\_accommodation.html](http://counselling.ssc.uwo.ca/procedures/medical_accommodation.html)

### ***Support Services***

Students who are in emotional/mental distress should refer to Mental Health@Western, [http://uwo.ca/health/mental\\_wellbeing/](http://uwo.ca/health/mental_wellbeing/) for a complete list of options about how to obtain help.

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

If you have any further questions or concerns please contact, Heidi Van Galen, Administrative Officer, Department of History, 519-661-2111 x84963 or e-mail [vangalen@uwo.ca](mailto:vangalen@uwo.ca).