



**The University of Western Ontario
HISTORY 4816A / HISTORY 9877A**

Digital Research Methods

Fall 2019-20

Tuesdays and Thursdays 6:30-8:30pm, Fall Term, SH 3355

Instructor: Professor William J. Turkel

Office Hours: Mondays 2:30-3:15 & Thursdays 5:30-6:15

Department of History, Office: Lawson Hall 2267

Email: wturkel@uwo.ca

Course Description:

In this course students will learn how historical content is produced, presented and published online; how to find and evaluate digital primary and secondary sources; and how to use computational techniques to work with digital resources. No previous background in the subject area is required.

Prerequisite(s):

Registration in any academic program at the second-year level or above.

Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. The decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Antirequisite(s):

Digital Humanities 2130A/B, Digital Humanities 3902F/G, the former History 2816F/G.

Course Syllabus:

Historical research now crucially involves the acquisition and use of digital sources, both primary and secondary. In this course, you 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. The digital sources that we work with include texts, images, maps, code, social media, spreadsheets, databases and linked open data. The techniques that we will employ 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.

Prior Experience

The only thing that you need to do well in this course is 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.

Attendance, Participation, Professionalism and Workload

You will be expected to attend and participate each class. *Failure to attend more than two classes without prior approval or a note from your academic counsellor will result in a failing grade.* In class it is important to share your own ideas and to listen carefully to the ideas of others.

This course also requires that you spend at least a 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. At first it is going to be hard 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, and there are a number of evenly spaced assignments of equal value.

Learning Outcomes

At the conclusion of this course you will

- Be aware of a wide variety of different kinds of digital sources and strategies for making use of them computationally
- Be familiar with a range of research approaches in digital humanities, computational social science and related disciplines
- Be acquainted with methodological applications of artificial intelligence
- Be more familiar with using computer code as a medium of expression

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. A tablet or netbook will probably not be sufficient. If you have any concerns, email me.

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-individuals.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.

The required text for the course is freely available online:

William J. Turkel. *Digital Research Methods with Mathematica*, 2nd ed. (2019).
<https://williamjturkel.net/digital-research-methods-with-mathematica/>

Methods of Evaluation:

<i>Assignment</i>	<i>Worth</i>	<i>Handed Out</i>	<i>Due Date</i>	<i>Zero Date</i>
01	20%	Sep 19	Sep 26	Oct 03
02	20%	Oct 03	Oct 10	Oct 17
03	20%	Oct 17	Oct 24	Oct 31
04	20%	Oct 31	Nov 14	Nov 21
05	20%	Nov 21	Nov 28	Dec 05

Each assignment has a suggested due date and, a week later, a zero date. If you hand in your assignment before the zero date, you will receive full credit for your work. After the zero date, it will be worth nothing.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to Academic Counseling as soon as possible.

N.B. Failure to attend more than two classes without prior approval or a note from your academic counsellor will result in a failing grade.

Course Schedule and Readings:

- Sep 05. Introduction
- Sep 10. Reading Code
- Sep 12. Computable Knowledge
- Sep 17. Text Content
- Sep 19. Data Structures
- Sep 24. Reusing Code
- Sep 26. Networks
- Oct 01. Indexing and Searching
- Oct 03. Geospatial Analysis
- Oct 08. Images
- Oct 10. Page Images
- Oct 15. Crawling
- Oct 17. Linked Open Data
- Oct 22. Cleaning Data
- Oct 24. Studying Societies
- Oct 29. Extracting Keywords

- Oct 31. Document Vectors
- Nov 05 – NO CLASS – FALL STUDY BREAK
- Nov 07 – NO CLASS – FALL STUDY BREAK
- Nov 12. Citations
- Nov 14. Natural Language
- Nov 19. Web Services
- Nov 21. Databases
- Nov 26. Measuring Images
- Nov 28. Machine Learning
- Dec 03. Topic Modeling
- Dec 05. Frontiers

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

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

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://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf

to read about the University's policy on medical accommodation. 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.

Please note: Please visit https://www.uwo.ca/univsec/academic_policies/index.html to view all updated academic policies regarding medical accommodations.

Plagiarism:

Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offense (see Scholastic Offence Policy in the Western Academic Calendar).

Students are expected to retain all research notes, rough drafts, essay outlines, and other materials used in preparing assignments. In the unlikely event of concerns being raised about the authenticity of any assignment, your instructor may ask you to produce these materials; an inability to do so may weigh heavily against you.

The following rules pertain to the acknowledgements necessary in academic papers.

A. In using another writer's words, you must both place the words in quotation marks and acknowledge that the words are those of another writer.

You are plagiarizing if you use a sequence of words, a sentence or a paragraph taken from other writers without acknowledging them to be theirs. Acknowledgement is indicated either by (1) mentioning the author and work from which the words are borrowed in the text of your paper; or by (2) placing a footnote number at the end of the quotation in your text, and including a correspondingly numbered footnote at the bottom of the page (or in a separate reference section at the end of your essay). This footnote should indicate author, title of the work, place and date of Publication and page number. Method (2) given above is usually preferable for academic essays because it provides the reader with more information about your sources and leaves your text uncluttered with parenthetical and tangential references. In either case words taken from another author must be enclosed in quotation marks or set off from your text by single spacing and indentation in such a way that they cannot be mistaken for your own words. Note that you cannot avoid indicating quotation simply by changing a word or phrase in a sentence or paragraph which is not your own.

B. In adopting other writer's ideas, you must acknowledge that they are theirs.

You are plagiarizing if you adopt, summarize, or paraphrase other writers' trains of argument, ideas or sequences of ideas without acknowledging their authorship according to the method of acknowledgement given in 'A' above. Since the words are your own, they need not be enclosed in quotation marks. Be certain, however, that the words you use are entirely your own; where you must use words or phrases from your source; these should be enclosed in quotation marks, as in 'A' above.

Clearly, it is possible for you to formulate arguments or ideas independently of another writer who has expounded the same ideas, and whom you have not read. Where you got your ideas is the important consideration here. Do not be afraid to present an argument or idea without acknowledgement to another

writer, if you have arrived at it entirely independently. Acknowledge it if you have derived it from a source outside your own thinking on the subject.

In short, use of acknowledgements and, when necessary, quotation marks is necessary to distinguish clearly between what is yours and what is not. Since the rules have been explained to you, if you fail to make this distinction, your instructor very likely will do so for you, and they will be forced to regard your omission as intentional literary theft. Plagiarism is a serious offence which may result in a student's receiving an 'F' in a course or, in extreme cases, in their suspension from the University.

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Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following web site:

www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Copyright

Lectures and course materials, including power point presentations, outlines, and similar materials, are protected by copyright. You may take notes and make copies of course materials for your own educational use. You may not record lectures, reproduce (or allow others to reproduce), post or distribute lecture notes, wiki material, and other course materials publicly and/or for commercial purposes without my written consent.

Support Services

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

Use of Electronic Devices

You are required to use a laptop in class, and allowed to use other electronic devices.

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.