

Computer Science 2120a/9642a/ Digital Humanities 2220a — Fall 2020 Course Outline

1. Course Information

Course name: Coding Essentials/ Programming for Scientists/Computing and Informatics for the Humanities I

Course code: COMPSCI 2120A/ COMPSCI 9642A/ DIGIHUM 2220A

Academic term: Fall 2020

Prerequisites: COMPSCI 1033A/B or DIGIHUM 1011A/B (for DIGIHUM 2220A only)

*Note that there are no prerequisites for COMPSCI2120A or COMPSCI 9642A.

2. Instructor Information

Contact: Jacob Morra, email at jmorra6@uwo.ca

Office hours: Friday 12:00pm-1:00pm via Zoom or by appointment

*Students must use their Western (@uwo.ca) email when contacting their instructors.

3. Course Syllabus, Schedule, Delivery Mode

Course description:

Essential information processing and coding skills for students. Includes core concepts of algorithms and data structures; creating programs and scripts to address problems that arise in applied research; examples of data sets and analyses drawn from a variety of disciplines. No previous programming background assumed.

Course-level learning outcomes:

- i) Students will develop a basic understanding of information processing, including algorithms and data structures.
- ii) Students will apply their knowledge by writing simple programs and scripts in Python to address technical problems.

Delivery of the course:

The course will be delivered entirely online. There will be no in-person attendance for lectures, tutorials, office hours, or evaluations.

Lecture/Lab/Tutorial Schedule:

Lectures: Asynchronous online, in the form of weekly modules (delivered at start of each week).

Labs/Tutorials: Synchronous online, times TBA, Tutorial Leaders (TAs) and sections TBA

Break-down of Course Topics:

*Note that not all topics will be covered, nor will they be necessarily covered in this order due to the nature and format of the course. Topics (especially those in the final weeks) are subject to change.

- Introduction to Programming
- Variables and statements
- Strings
- Input/output
- Conditionals
- Iteration
- Tuples
- Traversing and slicing
- Functions and types

- Recursion
- Numbers: Floating point arithmetic
- Successive approximation
- Lists
- Dictionaries
- Binary search
- Sorting Algorithms
- Data Visualization
- Machine Learning

Key Sessional Dates:

Classes begin: September 9, 2020
 Reading Week: November 2-8, 2020
 Classes end: December 9, 2020

4. Course Materials

Textbook: “How to Think Like a Computer Scientist”. Available at <http://openbookproject.net/thinkcs/python/english3e/>

Course website: <http://publish.uwo.ca/~jmorra6/build/html/> (primary) and <https://owl.uwo.ca/portal>

*Note that most course materials (lectures, activities, assignments) will be published to the primary course website. All course communication and submission of materials for evaluation will be conducted on OWL. Students are responsible for checking the primary course website and OWL on a regular basis.

If students need assistance with OWL, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Technical Requirements:

As this is an online course, students will require a computer/laptop and a stable internet connection. Students will also require a webcam and microphone for the Final Exam (Proctortrack). A microphone and/or webcam is also suggested for office hours.

Additional Tools:

Students should download and install the Anaconda Python3 distribution: <https://www.anaconda.com/download/>

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

	Is Worth	Due Date
Assignment 1	10%	Friday, September 25 @ 11:59 pm
Assignment 2	10%	Friday, October 30 @ 11:59 pm
Assignment 3	10%	Friday, November 13 @ 11:59 pm
Assignment 4	20%	Friday, December 04 @ 11:59 pm
Activities	10%	Various Fridays @ 11:59 pm Occasionally (throughout semester)

Final Exam	40%	TBA – During Exam Period
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Assignments:

Instructions for the submission of assignments will be posted on the primary course website. It is each student's responsibility to read and follow the instructions. Failure to follow the submission instructions may result in the assignment receiving a mark of zero. You will be required to submit each programming assignment electronically. Details will be given in the assignment descriptions. We reserve the right to use similarity detection software to detect possible plagiarism.

No submissions will be taken after the due date; there are no late submissions. All submissions after the exact due date will result in a mark of zero and will not be evaluated. No extensions will be given for assignments; however, if a student has serious medical or compassionate grounds, they should take supporting documentation to the Office of the Dean of their faculty and their instructor will be contacted.

A request for adjustment in an assignment mark must be made within 2 weeks of the date on which it was first available after marking. (Beyond that date, regrading will not be considered, regardless of whether you retrieved your assignment.) Such a request must be submitted to the course instructor in writing, and must include specific reasons for the request. The request must be accompanied by all materials that were originally handed in, as well as the original marker's grade summary sheet. The instructor will inform you by email when the re-evaluation process is complete.

It is each student's responsibility to keep up-to-date backups of assignment files in case of system crashes or inadvertently erased files. Students must keep copies of all material submitted, as well as the actual graded assignment, to guard against the possibility of errors in recording marks. It is not safe to discard these materials until you are satisfied that your final mark for the course has been computed properly.

Activities:

Activities will be posted to the course website occasionally throughout the semester. Solutions for these activities must be submitted by Friday at 11:59 during the week in which they are posted.

It is each student's responsibility to submit their own work; however, students are encouraged to discuss solutions with your peers.

Final Exam:

The final exam will take place during the examination period in December (exact date TBA) and will be scheduled by the Registrar's Office.

The exam will be conducted online. ProctorTrack will be used during the entire evaluation (for more on ProctorTrack, see the Academic Policies section of this document).

Tutorials/Labs:

- Tutorials are an opportunity to work on problems with the TA and your peers.
- Before tutorials begin a "Problem of the Week" will be posted on the primary course website.
- During tutorials, you're encouraged to work on these problems and ask the TA for assistance
- There is no submission required for these problems.
- You can also work on your lecture activity, assignments, or any other problems
- Tutorial attendance is optional.
- Tutorials will be conducted online via Zoom. More information will be available on the primary course website.

6. Accommodation and Accessibility

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf

Academic Consideration for Student Absence

Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the semester, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (e.g., December and April exams)
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs, see:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf

and for the Student Medical Certificate (SMC), see:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar:

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see http://www.registrar.uwo.ca/examinations/exam_schedule.html).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See Academic Calendar for details (under [Special Examinations](#)).

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

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:

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

We reserve the right to use similarity detection software to detect possible plagiarism.

Tests and examinations in this course will be conducted using the remote proctoring service Proctortrack. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the session will be **recorded**. More information about this remote proctoring service is available in the Online Proctoring Guidelines at the following link:

<https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf>

Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. Information about the technical requirements are available at the following link:

<https://www.proctortrack.com/tech-requirements/>

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on add/drop courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at (519) 661-2147 if you have any questions regarding accommodations.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

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

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.