COMPSCI 2121B/9643B/DIGIHUM 2221B
Course Outline - Winter 2023

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Course Information

Course Information – Winter 2023
COMPSCI 2121B – Modern Survival Skills II: Problem Solving Through Programming
DIGIHUM 2221B - Modern Survival Skills II: Problem Solving Through Programming
COMPSCI 9643B – Data Structures & Algorithms

Component	Day	Start Time	End Time	Location
Lecture 001	Tuesday	11:30 AM	1:20 PM	HSB-236
	Thursday	11:30 AM	12:20 PM	HSB-236
Lab 002	Thursday	4:30 PM	5:20 PM	SSC-1032

List of Prerequisites
For COMPSCI 2121B – COMPSCI 2120A/B, DIGIHUM 2220A/B, COMPSCI 1026A/B with a mark of at least 60% and registration in Medical Sciences First Entry, or Integrated Science 1001X with at least 60%.

For DIGIHUM 2221B – DIGIHUM 2220A/B

List of Antirequisites
For COMPSCI 2121B - COMPSCI 1027A/B, COMPSCI 1037A/B, DIGIHUM 2221A/B

For DIGIHUM 2221B – COMPSCI 2210A/B, Software Engineering 2205A/B, COMPSCI 2121A/B

Instructor Information

How to Contact Instructors

Instructors	Email	Office	Office Hours - via Zoom
Duff Jones - Lecturer	djone5<at>uwo.ca	MC 26	Tuesday: 4:00pm – 5:00pm
TBA	TBA	N/A	TBA

Topics Specific to You
Students must use their Western (*@uwo.ca*) email addresses when contacting the instructor and teaching assistants. **Please include the course code in the subject line of the email** to avoid the possibility of your email being overlooked (e.g., *DIGIHUM 2221 – Absence*).

An example of a topic specific to you would be informing your instructor of an absence. **You should not email the instructor, nor the TA, to ask questions about course content (or**

assignments) that would be of interest to other students—that's what the Forums are for. For individual help with an assignment, you should attend office hours.

Topics Impacting Everyone

Please use the OWL Forums. Any question you have about course content or assignments has almost certainly come up for your classmates. By using the Forums instead of email, everyone can benefit from the answer.

When you post a question, please provide an informative title. For example, if you are asking a question about popping items from a stack, then the post title should be something like, Stack Question. If you can be more specific, that's even better (e.g., Popping from a Stack). That way, anyone who has a question about popping items from a stack knows that their question may have already been answered. Try to keep threads to one topic; it makes finding a previous answer a lot easier.

If you know an answer to a classmate's question, please go ahead and answer it. If you see a mistake, offer a fix. Computer science and programming, like other areas of science, are collaborative, and the Forums allow for collaboration with your classmates. It should go without saying, but **the OWL Forums aren't Reddit**, so let's stick to the subject matter of the course and be courteous to each other.

Forums will be arranged into a variety of topics, so please try to post to the most relevant location.

Please do not post your assignment code to the Forums. This may be deemed an academic offence. Questions requiring the instructor or TA to see your code should be asked during office hours.

Office Hours

All office hours will be delivered via Zoom. A waiting room will be used to allow for assignments to be discussed privately.

Students may make Zoom appointments with the instructor/TAs if they are unable to attend office hours due to a course scheduling conflict. These appointments must be scheduled several days in advance.

Course Syllabus, Schedule, Delivery Mode

From the Academic Calendar: "An overview of core data structures and algorithms in computing, with a focus on applications to informatics and analytics in a variety of disciplines. Includes lists, stacks, queues, trees, graphs, and their associated algorithms; sorting, searching, and hashing techniques. Suitable for non-Computer Science students."

Learning Outcomes
Upon completion of the course, students will:

- be able to use Jupyter Notebooks for data analysis;
- understand how to use a variety of data structures (e.g., stacks, queues, trees, graphs);
- understand algorithms associated with the above (and other) data structures;
- know how to apply data structures and algorithms to solve practical problems; and
- how to create basic data visualizations in Python.

Please refer to "COMPSCI 2121B/9643B/DIGIHUM 2221B: Suggested Study Schedule – Winter 2023" for a week-by-week breakdown of the topics to be covered and the required readings for each week.

Delivery Mode
All lectures and labs will be delivered in-person and according to the schedule listed under "Course Information" above.

Contingency Plan for Online Learning
In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, affected course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

Course Materials

Required Textbook
Problem Solving with Algorithms and Data Structures Using Python
By Brad Miller and David Ranum
This book can be purchased as a paper textbook if you so choose, but it is part of the *Open Book Project*, so it can be accessed for free online at:
https://www.openbookproject.net/books/pythonds/. It can also be accessed via a link through the Textbook tool tab on OWL.

Recommended Textbook
Data Structures & Algorithms in Python
By Michael T. Goodrich, Roberto Tamassia, and Michael H. Goldwasser
We will occasionally use examples from this book, which can be purchased as a paper copy. The book goes into greater depth on many topics than the required text, so if you would like to explore algorithms and data structures more deeply, I strongly recommend this textbook to help with understanding.

Required Software
Anaconda Individual Edition
This software manages a lot of the more complicated aspects of Python, allowing you to focus on learning how to program rather than on how to set up a programming environment. You can download it here: https://www.anaconda.com/products/individual.

PyCharm (Community or Professional)
We will be using this as our integrated development environment (IDE). You can download it here: https://www.jetbrains.com/pycharm/. Your student information will give you access to the professional edition. You are encouraged to get that edition, as it will look more like the one that your instructor will use during lectures.

Using OWL
Students are responsible for checking the course OWL site (https://owl.uwo.ca/) on a **regular basis** for news and updates. This is the primary method (outside of lectures) by which information will be disseminated to all students in the class. **All course material will be posted to OWL**.

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

Technical Requirements
Students must have access to a computer onto which they can install the course software. A stable internet connection will also be important, particularly if we must shift to online learning at some point in the course. To attend office hours, which are being held via Zoom, you must also have a working microphone and/or webcam.

Methods of Evaluation

Course Grade
The overall course grade will be calculated as follows:
Assignments (x2)	*25%*
Projects (x2)	*30%*
Midterm	*15%*
Final Exam	*30%*

Assignments
The table below shows the suggested timeline for assignments. If, for any reason, the assignment schedule cannot be adhered to, the assignment marks will be prorated (i.e., if an assignment must be removed for some reason, the remaining assignment will still be worth 25% of the course grade).

Assignment	Date Assigned	Due Date	Course Weight
Assignment #1	January 27	February 10	12.5%
Assignment #2	March 3	March 17	12.5%

Note: The due dates listed above are tentative. Final due dates will be officially assigned with each assignment, but you can assume that they will be very close to the tentative due dates listed above.

Projects
The table below shows the suggested timeline for the two projects. If, for any reason, the project schedule cannot be adhered to, the project mark will be prorated (i.e., if a project must be removed for some reason, the remaining project will still be worth 35% of the course grade).

Project	Date Assigned	Due Date	Weight
Project #1	February 10	March 3	15%
Project #2	March 15	April 5	15%

Submitting Assignments

Assignments will be submitted via OWL or Gradescope (this will be finalized once the course begins) and will be checked to ensure that the code is of your own creation (see *Academic Policies* below). Assignments may be tested by automated software prior to the TA evaluating them. It is important, therefore, that you follow assignment instructions carefully in terms of naming conventions. Failure to do so may result in a **significant mark deduction**.

Submitting Projects

Projects will be submitted via Gradescope and will be checked to ensure that the code is of your own creation (see *Academic Policies* below). Projects will be tested by automated software prior to the TA evaluating them. It is important, therefore, that you follow project instructions carefully in terms of naming conventions. Failure to do so may result in a **significant mark deduction**.

Late Assignments/Projects

All assignments/projects are **due at 11:55pm Eastern time** on the assigned due date. Assignments/projects will be accepted up to four days (96 hours) after the assigned due date. **Assignments/projects will not be accepted after the four-day late period.** For each day late, there will be a 5% deduction from the overall value of the assignment/project. For example, the highest grade an assignment/project that is two days late can receive is 90%.

Request for Mark Adjustment

Any request for an assignment/project mark adjustment **must be made within one week** of the assignment/project being returned on OWL. After that, regrading will not be considered. Such a request must be submitted to the course instructor in writing or via email, and it must include specific reasons why you believe you deserve more marks. The request must be accompanied by all materials that were originally submitted (as well as the TA's grade summary sheet in the case of an assignment). **Prior to requesting a mark adjustment, the student should speak to the TA** regarding the assignment/project to ensure that they have correctly understood the TA's comments. The instructor will inform you by email when the re-evaluation process is complete.

Assignment/Project Backups

It is each student's responsibility to keep up-to-date backups of assignment/project 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.

Labs
Labs will cover material relevant to the lectures or to gaining a deeper understanding of programming. The TA will lead weekly lab session. There are no marks directly associated with labs, but lab material will help you better understand the assignments and projects. You are strongly encouraged to attend.

Examinations
For both the midterm and the final examination, **you will be permitted one double-sided sheet of notes. These notes must be handwritten on an 8.5 x 11 piece of paper. The notes must be unique to you (i.e., you can't photocopy someone else's sheet).** Any notes that don't meet the above requirements will be removed by the proctors during the exam. You will be required to submit your notes at the end of the exam.

Midterm
The midterm is a one-and-a-half-hour, in-class examination. The midterm will be delivered during class time on **Tuesday, February 28**. It will be composed of true/false, multiple choice, short answer, and code writing questions.

The midterm includes all material from Week #1 until the end of Week #6. (Please refer to "COMPSCI 2121B/9643B/DIGIHUM 2221B: Suggested Study Schedule – Winter 2023").

Final Examination
The final exam will be scheduled by the Registrar during the final examination period. The final exam is a three-hour, cumulative exam.

Student Absences

Accommodated Evaluations
Excused absences will be handled as follows:

For work totalling 10% or more of the final course grade, you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

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

The Student Medical Certificate is available at

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

Missed Assignment/Project

Assignments will not be re-weighted, nor will the grade be shifted to another course component. If an assignment/project is missed for a valid reason (as determined by the Academic Counselling Office of your Faculty of Registration), then an alternate due date will be arranged with the course instructor. **Late penalties may still apply, depending on what dates are covered by the permission granted to you. Check with your instructor if you are unsure if a late penalty applies.**

Missed Midterm

If the midterm is missed for a valid reason (as determined by the Academic Counselling Office of your Faculty of Registration), then the weight of the midterm will be added to the weight of the final exam. In this situation, the final exam will be worth 45% instead of 30%.

Missed Final Examination

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (e.g., more than two exams in 23-hour period, more than three exams in a 47-hour period).

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 the Academic Calendar for details (under Special Examinations).

Accommodation and Accessibility

Religious Accommodation
When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

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

Accommodation Policies

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

> https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf.

Academic Policies

The website for the Registrar is https://www.registrar.uwo.ca/.

In accordance with policy,

> https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

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.

Both the **final exam and the midterm allow one page of notes, as described on page 9 of this document**. Electronic devices will **not be permitted** during either examination.

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 website:

> https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

Code Checking Software will be used (via Gradescope) to ensure that all code submitted for evaluation is the original work of the student submitting that code.

In the event of a return to online learning due to the ongoing pandemic, the final exam in this course will be conducted using a remote proctoring service. 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**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about

this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at: https://remoteproctoring.uwo.ca/.

Support Services

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

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

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

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 Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Additional student-run support services are offered by the USC: https://westernusc.ca/your-services/.