

COMPSCI 1026A

Course Outline - Summer 2022

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Course Information

Computer Science (CS) 1026: Computer Science Fundamentals I provides an introduction to the basic concepts of computer programming and program design. It is intended for students who have an interest in learning basic programming skills, including those who intend to study Computer Science. **This course assumes no previous programming background.**

From the Academic Calendar: "The nature of Computer Science as a discipline; the design and analysis of algorithms and their implementation as modular, reliable, well-documented programs written in a modern programming language. Intended for students with little or no background in programming."

Programming skills will be developed using the Python programming language. Course topics include data types, variables, expressions, program constructs, strings (text), functions, basic data structures (lists, tuples, sets, dictionaries), objects, object-oriented design, classes, modularity, and problem-solving techniques.

List of Prerequisites

There are no prerequisites for CS 1026. Programming experience may be an asset, but it is not required.

List of Antirequisites

CS 1025, CS 2120, Data Science 1200, Engineering Science 1036, Digital Humanities 2220.

Learning Outcomes

Upon completion of the course, students will:

- be able to write scripts and programs using the Python programming language;
- know how to debug scripts and programs written in Python;
- understand how to implement and manipulate basic data structures like lists, tuples, sets, and dictionaries;
- understand basic algorithms (e.g., searching, counting) and how to apply them to a variety of problems;
- be comfortable using Python to read from, and write to, files;
- understand how to build programs that can handle errors and exceptions; and
- understand the object-oriented programming paradigm.

Contact Information

Instructors	Email	Office Hours - via Zoom
Duff Jones - Lecturer	djone5<at>uwo.ca	Mondays: 12:30 pm - 1:30 pm EDT
Alex Brandt – TA	abrandt5<at>uwo.ca	Tuesdays: 10:30 am – 12:30 pm EDT
Jaya Krishna Jasti - TA	jjasti<at>uwo.ca	Wednesdays: 3:00 pm - 5:00 pm EDT
Arshin Rezazadeh - TA	arezaza6<at>uwo.ca	Mondays: 4:00 pm – 6:00 pm EDT

Topics Specific to You

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

Please include the course code in the subject line of the email to avoid the possibility of your email being overlooked (e.g., *CS 1026 – Self-Reported Absence*).

An example of a topic specific to you would be a question regarding your use of a self-reported absence (SRA).

Topics Impacting Everyone

Please use the [OWL Forums](#). Any question you have about course content has almost certainly come up for your classmates. By using the Forums instead of an email, everyone can benefit from the answer. If you know an answer to a classmate’s question, please answer it. If you see a mistake, offer a fix. Computer science and programming, like other areas of science, are collaborative, and the Forums should allow for a level of collaboration with your classmates. **You can ask questions about assignments and labs, but don't post assignment or lab code in the Forums, as this can be construed as cheating.**

It should go without saying, but you may be surprised: **the OWL Forums aren't Reddit**, so let's stick to the subject matter of the course and be courteous to each other.

Forums are arranged into topics, so please try to post to the right place. If it could go in two places, flip a coin to make the choice. Or, better yet, write a small program to flip a coin for you.

Course Syllabus, Schedule, Delivery Mode

Please refer to "**CS 1026: Suggested Study Schedule – Summer 2022**" for a week-by-week breakdown of the topics to be covered and the required readings for each week. This file can be found in *OWL > Resources > Course Information > Suggested-Study-Schedule-Summer-2022.pdf*.

Important course information will be communicated through OWL Announcements. **It is your responsibility to keep up to date on these announcements.**

Lecture Delivery

Summer courses move at a much faster pace than courses during the Fall and Winter semesters. It is very important to stay ahead of the material as much as possible. To help with this, lectures for the entire course will be posted at the start of the course. **All lectures will be delivered asynchronously online via OWL**, so you do not have to attend a lecture or lab, and you will be able to work on things at your own pace.

Each week is commensurate with two weeks of a Fall/Winter course, so two topics will be discussed each week. To answer questions and provide examples, there will be synchronous lecture help/example sessions delivered via Zoom at the following times:

Day	Start Time	End Time
Tuesdays	12:30 PM EDT	1:30 PM EDT
Thursdays	12:30 PM EDT	1:30 PM EDT

Attendance is not mandatory for these sessions. The sessions will be recorded and posted for students who are unable to attend. The purpose of these sessions will be to allow students to see further examples of that week's concepts and to ask questions about the concepts. If necessary, some sessions may run longer than the time allotted above.

Lab Delivery

Labs will be delivered through the zyBooks Interactive Online Course (see *Required Software*). **For help with the zyLabs, please email your TA. Your email title should contain the course number and the lab you are seeking help with. For example: CS 1026 – Question About Lab #7.** TA office hours will be the most appropriate time to ask lab questions.

Making Appointments

Students may make Zoom appointments with the instructor if they are unable to attend office hours due to a scheduling conflict. Note, however, that the class is very large, so appointments should only be made when it is impossible for help to be provided in an alternate manner.

Course Materials

Please see *OWL > Resources > Course Information > Setting-Up-PyCharm.pdf* for instructions on how to install and use Anaconda and PyCharm.

Required Software

Anaconda Individual Edition

This software manages a lot of the more complicated aspects of Python, allowing you to focus on programming rather than on how to get your programming environment working. You can download it here: <https://www.anaconda.com/products/individual>.

PyCharm (Community or Professional)

We will be using this as the integrated development environment (IDE) for assignment programming. An IDE makes life a little easier for us when programming, as it will give us useful features like syntax highlighting, debugging, language support and more. You can download it here: <https://www.jetbrains.com/pycharm/>. Your student information will give you access to the Professional Edition if you want that edition. I am using the Professional Edition, so if you just get the Community Edition, things may look a little different.

Of course, you're free to use a different IDE if you wish, but IDEs have a learning curve associated with them; if you use something other than PyCharm, it may be difficult for your instructors to help you if you run into a problem in the IDE.

zyBooks Interactive Online Course

This is an online, interactive Python course developed by zyBooks. This course provides readings, exercises, and labs that will allow you to get a significant amount of practice with programming in Python. It is a requirement for completing the lab section of this course. To access zyBooks, you need to:

1. Sign in or create an account at <https://learn.zybooks.com/signin>
2. Enter zyBook code: **UWOCOMPSCI1026ABJonesSummer2022**
3. Subscribe. There is a subscription cost.

Recommended Textbooks

Think Python, 2nd Edition by Allen B. Downey

This book is a free textbook that can be purchased as a paper textbook, if you so choose. It can be accessed as a PDF or HTML document via the publisher's website:

<https://greenteapress.com/wp/think-python-2e/>.

The course is not directly organized around this textbook, but it covers the same topics, and it is very good at presenting information in a concise way. I highly recommend it.

Python for Everyone, 3rd Edition by Cay Horstmann and Rance Necaise

This is a more traditional textbook, which means it is not free. It provides a lot of excellent details on the topics covered in the course. If you want to delve deeply into the topics of the course, this is a good textbook for that. You can purchase it online.

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:** <https://owl.uwo.ca/>.

If students need assistance with the course OWL site, 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

Students must have access to a computer onto which they can install the course software. A stable internet connection will also be important for various aspects of the course. It is **required** that you have a working microphone and webcam to participate in "extra help" sessions and, more importantly, so that proctoring software can be employed during both the midterm and final exam.

Methods of Evaluation

Course Grade

The overall course grade will be calculated as follows:

Component	Weight
zyBooks Labs (zyLabs)	10%
Assignments	40%
Midterm	15%
Final Exam	35%

Labs

Labs will be completed in the zyBooks Interactive Online Course. Lab completion will be assessed prior to the midterm and prior to the final examination. To receive full marks, you must **correctly** solve approximately 80% of the labs by the end of each assessment period. Your mark will be pro-rated (rounded down to the nearest 0.5%) based on the number of labs you correctly solve. So, if you correctly solve 33 labs during Assessment Period #1, you will receive the full 5% in your lab grade. If you solve 27 of the labs, you will receive 4% rather than 5%. If you solve 26 of the labs, you will receive 3.5% for that assessment period.

The results of the two assessment periods are added together to arrive at your final lab grade.

Assessment Period #1: May 9 - June 1

This section includes all the labs to be completed by the midterm. Completing these labs will provide a solid understanding of the material that will appear on the midterm.

Topic	Lab(s)	Total Labs	Date Assessed
Introduction	1.12 - 1.17	6	June 1
Variables/Expressions	2.12 - 2.17	6	June 1
Types	3.10 - 3.13	4	June 1
Branching	4.11 - 4.16	6	June 1
Loops	5.14 - 5.20	7	June 1
Functions	6.18 - 6.24	7	June 1
Lists	7.14 - 7.18	5	June 1
Number of labs required for full 5%		33/41	June 1

Assessment Period #2: June 2 - June 17

This section includes all the labs to be completed by the final exam. The final exam is cumulative, but it will be more heavily weighted toward material from this section of the course.

Topic	Lab(s)	Total Labs	Date Assessed
Files	8.8 - 8.12	5	June 17
Exceptions	9.7 - 9.10	4	June 17
Sets	10.2 - 10.3	2	June 17
Dictionaries	11.6 - 11.10	5	June 17
Classes	14.11 - 14.15	5	June 17
Inheritance	15.6 - 15.7	2	June 17
Number of labs required for full 5%		18/23	June 17

Assignments

The table below shows the tentative 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 assignments will still be worth 40% of the course grade).

Assignment	Due Date	Course Weight	Workload
Assignment #1 <i>Getting Acclimated</i>	May 18	2.5%	Light
Assignment #2 <i>Conditions and Iteration</i>	May 27	7.5%	Medium
Assignment #3 <i>Files and Functions</i>	June 8	15%	Heavy
Assignment #4 <i>Object-Oriented Programming</i>	June 17	15%	Heavy

Note: The topics and 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.

Submitting Assignments

The process for submitting assignments will be explained on the first assignment sheet. Assignments will always be due at 11:55pm EDT on the assignment due date. Assignments 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**.

Late Assignments

Assignments will be accepted up to three days (72 hours) after the assigned due date.

Assignments will not be accepted after the three-day late period. For each day late, there will be a **10% deduction** from the overall value of the assignment. For example, 80% is the highest grade that an assignment that is two days late can receive.

Request for Mark Adjustment

Any request for an assignment mark adjustment **must be made within one week** of the assignment being returned to you. After that, regrading will not be considered.

Such a request must be submitted to the course instructor via email, and it must include specific reasons why you believe there was an error in grading. The request must be accompanied by all materials that were originally submitted, as well as the original marker's

grade summary sheet. **Prior to requesting a mark adjustment, the student should speak to the TA** regarding the assignment 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 Backups

It is each student's responsibility to keep up-to-date backups of assignment files in case of system crashes or inadvertent file erasure. 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.**

Examinations

Both the midterm and the final examination are closed-book exams. You are **NOT** permitted to use a calculator, notes, nor any other software (including an IDE). Each exam will be remotely proctored using **remote proctoring software that you will need to install on your computer prior to the exam.**

Tentative Date	Start Time	End Time	Weight
June 1	7:00 PM EDT	9:00 PM EDT	15%
TBD	TBD	TBD	35%

Midterm

The midterm is a two-hour, closed-book examination. The material covered on the midterm will be communicated via OWL closer to the date of the exam. The tentative date for the midterm is **Wednesday, June 1, 2022 from 7:00 pm EDT to 9:00 pm EDT**. The midterm will be written online via OWL, and it will be proctored using remote proctoring software.

Final Examination

The final exam will be scheduled once the course begins. The final exam is a three-hour, cumulative exam. It will be more heavily weighted to material from the second half of the course. The final exam will be written online via OWL, and it will be proctored using remote proctoring software.

Final Examination Performance Requirement

To be eligible to receive a passing grade in the course, your final exam mark must be at least 40%. If your mark on the final is under 40%, your maximum grade in the course will be 45%.

To be eligible to receive a grade of 65% in the course, your mark on the final exam must be at least 50%. If your mark on the final exam is under 50%, your maximum grade will be 63%.

Accommodated Evaluations

Excused absences will be handled as follows:

Missed Midterm

If the midterm is missed because of an **excused absence** (e.g., SRA), then the midterm's weight will be added to the weight of the final examination (i.e., your final exam would be worth 50% instead of 35%). There is no makeup midterm examination.

Missed Assignment

Assignments are due at 11:55pm on the assigned due date. Each assignment can be submitted up to three days late (**see Late Assignments above**). In the event of an excused absence (e.g., SRA), **the due date does not change**. It is still due within the three-day period. Late penalties that would have been incurred will be ignored for each day that is covered by an excused absence. **An excused absence cannot, however, be used to extend the late period beyond the usual three days.**

For example, if an assignment is due on Friday, **and an SRA is used** to cover Friday and Saturday, then the assignment can be submitted without penalty before 11:55pm on Sunday. The assignment can be submitted with a 10% penalty up to 11:55pm on Monday. It cannot be submitted after Monday. Any assignment more than three days late will receive a mark of zero.

Student Absences

Academic Consideration for Student Absences

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

- (i) Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:
 - an absence must be no more than 48 hours;
 - the assessments must be worth no more than 30% of the student's final grade;
 - no more than two SRAs may be submitted during the Fall/Winter term.
- (ii) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.

- (iii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered, unless otherwise instructed in the course outline.

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

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

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

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

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 the University's list of recognized religious holidays (updated annually) at

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

Absences from Final Examinations

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).

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 policy on Academic Accommodation for Students with Disabilities can be found 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.

Testing/Exam Policies

The **midterm and final exam are both closed-book** and are delivered online, via OWL, using remote proctoring software. No other software, calculators, notes, nor any other material are permitted during either exam. You are **NOT** permitted to use an IDE to help with writing code.

Code Checking Software

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

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.

Remote Proctoring

The midterm and 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 webpage 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/>.

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 (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/>.

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

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