CS1026A, Summer 2020
Computer Science Fundamentals I
Syllabus

Course Information

Overview

This course is designed to give students a first introduction to computer science; no previous experience is required nor expected. Computer science at its heart is about problem solving. This course provides an introduction to the basic concepts of computer programming and program design to solve problems. It is intended for students who have interest in learning basic programming skills including those who intend to study Computer Science. This course assumes no previous programming background.

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. Programming examples and assignments are taken from a variety of disciplines.

Calendar Description

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.

Prerequisite Requirements

None. There are no prerequisites.

Antirequisites

Computer Science 1025A/B, Computer Science 2120A/B, Engineering Science 1036A/B, Digital Humanities 2220A/B

Teaching Staff + Office Hours

Alex Brandt	abrandt5@uwo.ca
MC 365	Online Office hours: Tuesdays 19:00-20:00.

Teaching Assistants

Abdelkareem Jaradat
ajarada3@uwo.ca
Mondays 11:00-12:00
Wednesday 11:00-12:00

Shabnam Shabani
sshaban7@uwo.ca
Wednesdays 10:00-11:00
Thursdays 13:00-14:00

Course Schedule, Interactive Sessions

This online version of CS1026 is delivered using an interactive online Python course though zyBooks (https://www.zybooks.com); see also the Course Materials sections below). The labs are administered through this online zyBook and must be purchased. A student's progress through this online course is at their own pace. However, students should note that in this accelerated summer course, normally 10 hours per week are spent in class as 6 lecture hours per week and 4 lab hours per week.

Students should progress through the course at a pace which allows them to adequately complete each assignment. This is roughly 4 chapters per assignment.

For labs, one must simply complete all of the labs by the end of the course (June 19, 2020). These labs are automatically in the zyBook online course. The grades on the labs in the zyBook make up the lab mark for this course. See the course evaluation section below.

Office hours, tutorial sessions, and interactive/recorded lectures will occur via the Blackboard Collaborate app on the course website on OWL. Review the course website for further announcements and information on any live or synchronous sessions with the teaching staff.

Course Materials

Required Online Course and Textbook:
The online content for this course will be delivered through zyBooks as an interactive online textbook/walk-through/course. The cost for this is $77USD. You will need to create a zyBooks account using your UWO email. Instructions:

1. Sign in or create an account at https://learn.zybooks.com
2. Enter the zyBook code: **UWOCOMPSCI1026Summer2020**
3. Subscribe.

Recommended Text:
For a more traditional textbook, a suggested reading material is *Python for Everyone* (2nd or 3rd edition), by Cay S. Horstmann and Rance D. Necaise, Wiley, 2016.

Lecture Notes:
The lecture slides for an in-class version of this course are available on OWL. Note that the chapters presented in the lectures do not match the chapters in the zyBook.

Programming tools:
Required for this course is the use of the Python programming language: https://www.python.org. Python version 3.6 or greater; *not Python2*. You can program with a simple text editor (e.g. notepad, TextEdit), but better tools exist such as an *integrated development environment* (IDE).

- *Jupyter* integrates programming into a word-like document called a "notebook". *JupyterHub* is a version of Jupyter provided "in the cloud" by the university at https://jupyterhub.sci.uwo.ca. JupyterHub's benefits are: (1) consistent access to your pro-

gramming work form any computer; (2) no downloading or setup required; and (3) automatic backups of your files. You are also welcome to install a local version of Jupyter: https://jupyter.org/.
- *PyCharm EDU* is a more traditional IDE used previously for 1026: https://www.jetbrains.com/education/download/#section=pycharm-edu

Computing Facilities

Each student enrolled in CS1026 will be given an account on the Computer Science Department First Year Network. By using your CS1026 account, you agree to abide by the Rules of Ethical Conduct established by the Department of Computer Science.

Labs

Labs provide students with guided, hands-on experience with programming and algorithmic problem solving. Labs are administered within the online zyBook course and are automatically graded. The grades on the labs in the zyBook will make up the student's lab mark for the course.

Email Contact

- In accordance with university policy, 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.
- We may need to send email messages to the whole class or to students individually. Email will be sent to the UWO email address assigned to students by Western Technology Services (WTS). Note that email providers establish quotas or limits on the amount of space available to you. If you let your email accumulate there, your mailbox may fill and you may lose important email from your instructors. Losing email is not an acceptable excuse for not knowing about the information that was sent. It is the responsibility of the student to read this email on a regular basis. You may wish to have mail forwarded to an alternative email address. See the WTS website for instructions on forwarding email.
- Students are encouraged to contact the course instructor via email with brief, email appropriate questions regarding lecture materials or clarification of assignments. However, before sending email to an instructor, the student should check the course website to see if the requested information is already there. Students must send email from their UWO WTS account and include CS1026 in the subject line of the email.

Evaluation & Tentative Schedule

Evaluation	Date	Weight
zyBook Labs	Various	**12%**
Assignment 1	May 15	**6%**
Assignment 2	May 22	**8%**
Assignment 3	June 05	**9%**
Assignment 4	June 12	**9%**
Midterm Exam	May 29	**15%**
Final Exam	June 19	**41%**

* To obtain a passing grade in this course students most obtain at least 40% on the final exam, otherwise the maximum mark they may receive is 45%. To obtain a 60% or higher overall mark in this course, students must obtain a minimum mark of 50% on the final exam, otherwise the maximum mark they may receive is 58%.

** Exact exam details are TBD, but they will be fully online. The final will be the week of June 15th, approximately June 19 or June 20. Therefore, exams may take place on Saturdays.

Assignment Regulations

- If, for any reason, the schedule cannot be adhered to, the marks for assignments will be prorated to future assignments or the final exam.
- Assignments are due at 23:55 on the due date. Late assignments will be handled as follows.
  0-24 hours late: -15%,
  24-48 hours late: -30%,
  >48 hours late: submissions no longer accepted.
- All assignments are to be submitted electronically through the course website on OWL. Instructions for the submission of assignments will be posted on the 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.
- Plagiarism is unacceptable. It is reasonable to assume students discuss assignments, however all submissions shall be independent and individual work.
- Assignments are marked by Teaching Assistants following a rubric as well as automatically using software.
- Any concerns with assignment marking must be addressed **within one week** of assignment marks being released. Direct such concerns to the instructor via an email, specifying the exact reasons why you deserve more marks.
- It is the student's responsibility to keep up to date backups of all course work, including assignments. Accidental file deletions, computer failures, or spilled coffee, is not an excuse. Student's should keep copies of all coursework until they are satisfied with their final course mark. This ensures marks are recorded accurately and evidence supporting any discrepancies can be produced.

Lab Regulations

The labs are administered through activities in the course's zyBook. You are responsible to complete the activities marked as "Labs" (although all other activities should also be completed to aid your learning). Labs can be completed at any time, and at any pace you see fit. You have until the last day of classes (June 19, 2020) to complete them. At that point, your lab mark for the course will be calculated as your overall average on the zyBook labs.

While labs are open-book, in the sense that you make seek information from the zyBook, online sources, the TA, etc., they still represent individual efforts and should be completed independently from other students in the course. Plagiarism is unacceptable.

Exam Regulations

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/

Please contact the course instructor if you are not able to meet the technical requirements or if you have any questions about the use of this remote proctoring service for this course.

- Exams are closed book. Any required information, numerical constants, formulas, etc. will be given as part of the exam/question.
- This is no makeup midterm exam. If the midterm exam is missed, and appropriate documentation submitted and supported by the student's home faculty's academic counselling office, then the value of the midterm will be shifted to the final exam.
- No electronic devices other than a simple scientific calculator may be in the possession of the students during exams.
- Any concerns with mid-term exam marking must be addressed within one week of the mid-terms being returned in class.
- Exam schedules are TBD. Dates and times will be announced on the course website on OWL.

Overview of Course Topics

- Introduction
  - Components of a computer
  - Hardware
  - Software
  - Algorithm development
- Numbers and Strings
  - Variables
  - Integers
  - Floating point numbers
  - Input and Output
- Control flow
  - `if`, conditionals
  - Boolean and logic
  - Loops: `while`, `for`
- Functions/Procedures
  - Recursion
- Basic data structures
  - Lists
  - Sets
  - Dictionaries
- File I/O
- Data processing
- Exceptions
- Classes
  - Objects
  - Basic Object-Oriented Design
  - Inheritance
  - Polymorphism

Policies, Accommodation, Accessibility

Missed Assignments and Exams

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. During the COVID-19 pandemic, medical notes are not required. Medical absence can be reported through the Student Illness Reporting Tool.

If this portal is not available (i.e., if the COVID-19 pandemic has lifted before the end of the course), or if you have missed (or will be missing coursework) for a non-medical reason beyond your control, approval can be granted either through a Self-reported Absence (available on Student Center) or via the Dean's Office/Academic Counselling unit of your Home Faculty.

Non-medical reasons must be accompanied by supporting documentation. If you are a Science student, contact information for the Academic Counselling Office for the Faculty of Science is available at https://www.uwo.ca/sci/counselling/.

In all cases, you must contact your instructor as soon as possible, and no later than 24 hours after the period covered, to clarify how you will be expected to fulfil the academic expectations you have missed (unless other instructions are indicated in this Course Outline). For further information, please consult the University's policy on academic consideration for student absences.

If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam). Students with exam conflicts or multiple exam situations may also be eligible to write the Special Exam.

In accordance with the University's absence policy there are two different circumstances: (i) missed course work totalling less than 10% of the course mark, or (ii) missed course work totalling 10% or more of the course mark.

(i) Missing a single assignment results in a student falling into this case. A student must communicate with the instructor their inability to complete the assignment at least 24 hours prior to the due date of the assignment. Extensions on the due date or reallocation of the assignment weight to the other 3 assignments may be given. With less than 24 hours notice students should proceed as in case (ii).

(ii) In accordance with the University's illness policy a student must submit documentation as soon as possible to the Dean's Office of the student's Faculty of registration in order to obtain accommodation. If your circumstances have been approved then:
   (1) Missing one or two assignments will move their weight to the other assignments;
   (2) Missing more than two assignments will move the weight of all missed assignments to the final; and
   (3) Missing the midterm will move its weight to the final.

This policy only pertains to assignments and the midterm. Missing the final exam is a special case which must be approved by your faculty's Academic Counselling Office. There is no excusal from labs since they are open ended and available for you to take at any time. The only deadline for those is the last day of classes.

Mental Health

Mental and emotional well-being is highly important and should not be treated lightly. Students who are in emotional/mental distress should refer to Health and Wellness at Western for a complete list of options about how to obtain help. Students in immediate distress should contact Student Health Services, Campus Police, or Psychological Services whose contact information can be found here.

Accessibility

Any student requiring arrangements to make this course more accessible to them (e.g. providing course materials in an alternate format) should contact the instructor. Students may also wish to contact Student Accessibility Services via their website or at (519)-661-2147 for further assistance.

Ethical Conduct

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

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Student Support

The Student Development Centre provides leaning skills services for students. Other services are also provided by the University Students' Council

Registration Services

Students should refer to the Registrar's website or information and services involving registration.