Western University
Faculty of Science
Department of Computer Science

1. General Course Information

Course Information

Name:	Computer Science Fundamentals II
Number:	CS1037A
Term:	Fall 2017

Lectures: Middlesex college room 110
Tue 8:30-10:30, Thu 8:30-9:30
September 7 - December 5

Labs: Begin the week of September 18
No labs the week of October 23 (Reading week)
Spencer engineering bldg room 1015
002 Thu 4:30-6:30
003 Tue 2:30-4:30
004 Thu 6:30-8:30
005 Mon 12:30-2:30
006 Tue 10:30-12:30
007 Fri 3:30-5:30

Prerequisite Requirements

Prerequisite(s): Engineering Science 1036A/B.
Antirequisite(s): Computer Science 1027A/B, Computer Science 2121A/B, Digital Humanities 2221A/B.

Unless you have either the requisites 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. This 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.

2. Instructor Information

Instructor: Jason Brasse
Office: MC 365
Office hours: **By appointment only**
Mon 1:30 - 2:30
Tue 10:30-11:30
Wed 12:30-1:30
Thu 9:30-10:30
Email: jbrasse2<at>uwo.ca

TAs: ASADI, Mohammadali   masadi4@uwo.ca
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TSEGAYE, Amha   atsegaye@uwo.ca
YUAN, Haoze   hyuan46@uwo.ca

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

3. Course Description/Syllabus

A continuation for Engineering Science 1036A/B. Data organization and manipulation; abstract data types and their implementations in an object-oriented setting (C++); lists, stacks, queues, trees; pointers; recursion; file handling and storage.

Intended for students in the Faculty of Engineering.

Extra Information: 3 lecture hours, 2 laboratory/tutorial hour.

Topics to be covered tentatively

a. Single-Dimensional and Multidimensional Arrays (1 week)
b. Pointers and Dynamic Memory Management (1 week)
c. Vectors (1 week)
d. Introduction to Object Oriented Programming in C++ (0.5 week)
e. Objects, Classes, Constructors and Destructors (2 weeks)
f. Data Encapsulation (1 week)
g. Single and Multiple Inheritance (1.5 weeks)
h. Polymorphism (1 week)
i. Data Structure: Linked Lists (1 week)
j. Data Structure: Stack (1 week)
k. Data Structure: Queue (1 week)

Upon successful completion of this course, students will be able to:

a. Solve different problems using the syntactical structures of C++ language
b. Understand and manipulate single-dimensional arrays, multi-dimensional arrays, pointers and vectors
c. Apply Object Oriented concepts such as Classes, Objects, Data Encapsulation, Inheritance and Polymorphism to software problems in C++
d. Understand and implement simple data structures such as Linked Lists, Stacks and Queues

4. Course Materials

Recommended Textbooks:
    Title: Starting Out with C++: Early Objects
    Author(s): Gaddis / Walters / Muganda
    Publisher: Pearson

Edition: Ninth
ISBN: 9780134400242

Title: Introduction to Programming with C++
Author(s): Y. Daniel Liang
Publisher: Prentice Hall
Edition: Third
ISBN: 9780133252811

Title: Data Structures and Other Objects Using C++
Author(s): Michael Main and Walter Savitch
Publisher: Addison-Wesley
Edition: Fourth
ISBN: 9780132129480

Use of Electronic Devices: Students may use laptops, tablet computers, or smart phones *only* to access the course OWL site during lectures and tutorials. Use of *nonprogrammable* calculators *only* is permitted during examinations. No other electronic devices may be used at any time during lectures, tutorials, or examinations.

Students should check OWL (http://owl.uwo.ca) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

5. Methods of Evaluation

Evaluation: In order to pass the course, a student must obtain at least 40% in each component (All assignments are considered as one component and all labs are considered as one component). A student who fails to obtain at least 40% in any component shall receive a final grade not greater than 45%. All assignments should be submitted as soft copies to the course website at OWL. All assignments will be checked for plagiarism. Midterm and Final exams may include material from the textbook, lectures, labs and assignments. The midterm will be held in class (MC 110) during lecture hours (08:30am – 10:30am). Please note that the final exam will be **cumulative**. The date and the weight of each component are depicted in the following table:

Component	Weight	Deadline/Date	Time
Lab (10 labs)	10%	Will be announced at OWL	During lab hours
Assignment 1	5%	Oct. 01, 2017 (tentative)	11:55 pm
Assignment 2	10%	Oct. 22, 2017 (tentative)	11:55 pm
Assignment 3	15%	Nov. 26, 2017 (tentative)	11:55 pm
Mid-Term (closed book)	20%	Oct. 31, 2017 (tentative)	08:30 – 10:30
Final (closed book)	40%	TBD	TBD

Assignments Submissions and Late Assignments Policy: The due dates of the assignments are shown in the table above. Please note that all these dates are tentative. The due dates will be confirmed when the assignments are posted on OWL. Students, who submit their assignments after the due date, will be penalized 10% a day (deduction of 10 marks regardless of the student's grade) including

weekends. No assignments will be accepted after the fourth day. It is the student's responsibility to ensure that the correct version is submitted to OWL. No excuses will be accepted if an incorrect version is submitted instead. Students can resubmit their assignments until the due date. In this case, only the last version will be marked. Assignments will not be accepted if submitted to the professor's email instead of OWL and will be deleted immediately and deemed un-submitted. With respect to the labs, each lab must be completed during lab hours where students have to show the TA the results of each lab.

Your assignments may be prepared on a computing system other than the ones provided by the Computer Science department. However, students **must** ensure that their submitted programs run correctly on the equipment of the Computer Science department.

Assignments are marked by teaching assistants. You are responsible for retrieving your marked assignment within **two weeks** following their return. Past this period, assignment marks are considered final.

If you have any questions regarding an assignment mark, you must first contact and discuss your concerns with your teaching assistant. If the matter remains unresolved, you may then take your concerns with your course instructor.

6. Accommodation and Accessibility

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in WSC 140, and can be contacted at scibmsac@uwo.ca.

For further information, please consult the university's medical illness policy at http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

If you miss the miss the midterm exam or any assignment due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible. If your faculty's Academic Counselling Office has approved your circumstances, the value of the missed test will be reallocated to the final exam.

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).

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).

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

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

8. Support Services

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 Services for Students with Disabilities (SSD) at 661-2111 ext. 82147 if you have questions regarding accommodation.

The policy on Accommodation for Students with Disabilities can be found here: www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

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.