COSC 121 – Computer Programming II
Summer 2021 – Term 2

Instructor	Jeff Bulmer		
Class time	Monday/Thursday	8:30 – 12:00 PST	
Lab time:	**L01:** Tuesday/Thursday	17:30 – 19:30 PST	**TA:** Pinku Deb Nath
	L02: Monday/Wednesday	17:30 – 19:30 PST	**TA:** Sherif Elbishlawi
	L03: Tuesday/Thursday	12:00 – 14:00 PST	**TA:** Billy Spelchan
	L04: Wednesday/Friday	10:00 – 12:00 PST	**TA:** Akshat Poddar
Office hours:	By appointment		
Location:	All lectures, and office hours are on **Zoom: 683 148 6460** (password given on Canvas). Labs are on Zoom, but at a different link, which will be provided on Canvas.		
E-mail:	*Instructor:* **jeff.bulmer@alumni.ubc.ca** **(preferred contact method)**		
	TAs: Please contact TAs through Canvas, unless otherwise stated by the TAs during the labs.		

Course Description

COSC 121 (3) Computer Programming II: Advanced programming in the application of software engineering techniques to the design and implementation of programs manipulating complex data structures.

Prerequisites

A score of 60% or higher in one of COSC 111, COSC 123.
Students who lack the prerequisites should not be registered for this course and will receive a failing grade if they remain in it. Any exceptions must be brought to the attention of the instructor immediately.

Assessment

- **Lecture quizzes**   12%
    - **Two options**
        - o   Clickers   Up to 12%
        - o   Online Quizzes   Up to 12%
- **Lab work**   20%
    - o   Lab Exercises   No marks
    - o   Assignments   20%
- **Exams**   68%
    - o   Midterm 1   5% - 10% (45 minutes, online Canvas quiz)
    - o   Midterm 2   10% - 18% (75 minutes, online Canvas quiz)
    - o   Final   40% - 53% (150 minutes, cumulative, online Canvas quiz)

The lecture quizzes mark is calculated using the ***best*** of the 2 options below.

Option 1: Each lecture will contain 5-15 in-class clicker questions, typically broken up by slide deck. Answers must be submitted during the lecture period using iClicker Cloud. Upon getting at least 80% of the clicker questions correct, a student will be awarded the full 12% lecture quizzes mark.

Option 2: In addition to in-class clicker questions, additional multiple-choice quizzes will be posted after each lecture containing questions related to the lecture content. These can be attempted several times but must be completed before the next following lecture. If a student does not score an 80% or higher on the in-class clicker questions, the combined grade achieved in the multiple-choice quizzes will be used instead.

The exams mark is calculated based on the *best* of the 4 options below. This means if a student does not do well on an exam, then this exam will have less weight.

	Option 1	Option 2	Option 3	Option 4
Midterm 1	5%	5%	10%	10%
Midterm 2	10%	18%	10%	18%
Final	53%	45%	48%	40%

Final grades will be based on the evaluations listed above and the final grade will be assigned according to the standardized grading system outlined in the UBC Okanagan Calendar, which can be found here: http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014

Passing criteria: to pass the course, a student must receive

- An overall course grade of at least 50%, and
- A combined grade of at least 50% on the exams, midterms and final (based on the best option from the above table).

Otherwise, the student will be assigned a maximum mark of 45. Students will not be able to receive a passing grade if they are not registered to the required lab section.

Grading Practices: Faculties, departments, and schools reserve the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school. Grades are not official until they appear on a student's academic record.

Grievances and Complaints: If you have any complaint related to this course, e.g., you feel your mark was unfair or incorrectly recorded, **please make sure that I am aware of the problem as soon as possible.** You may talk first to someone else if you do not feel, for whatever reason, that you can directly approach me. If the complaint is not resolved to your satisfaction, you should e-mail the Associate Head, Dr. Yves Lucet at (yves.lucet@ubc.ca) or the Department Head, Dr. John Braun at (john.braun@ubc.ca).

Course Format

Lectures**:** This course will make use of online lectures delivered via Zoom. There are two lectures every week (*see the course schedule near the end of this syllabus document*).

Lecture format:

- Each lecture will be livestreamed at the time indicated on page 1 of this syllabus.
- You can join using **Zoom** (see first page of syllabus). Lectures will be recorded and posted on Canvas.
- Most lectures will include clicker questions that are counted towards the *Lecture Quizzes* portion of the grade.

Class exercises using iClicker Cloud

- Most lectures will have clicker multiple choice questions.
- **Clicker questions can only be answered during the lecture time.**
- You must create an iClicker Cloud account. Instructions on how to do this and how to use it in this class can be found at: https://lthub.ubc.ca/guides/iclicker-cloud-student-guide. Because the registration data is stored in the US, you may use a pseudonym name and email address.
- You can submit your responses through the web interface (must sign-in to you iClicker account) or phone app (search for iClicker Reef on the play/app store). Whether you use the web interface or phone app, you must "join" class on the clicker's system after the class starts.
- You may discuss clicker questions and their answers with your classmates, but each one must provide their own solution.

Labs

- Labs will be offered online through Zoom (Your TA will announce the format)
- Labs are **not** necessarily recorded. Your TA will provide more information during your first lab.
- A student must be registered in one lab for their assignments to be accepted.

Exams

- *Platform***:** Exams are provided as online **Canvas Quizzes** that will be available only during the exam time (see the schedule near the end of this syllabus).
- *Format***:** The examinations in this course are all *closed-book*, so you are NOT permitted to access any of the course materials, including your notes, during the exam. You are NOT to use any search engines or other programs except for the program required to complete the exam. You are also NOT to communicate with anyone about the exam during the scheduled write time or after the examination – you are to work independently. Communication with other students (written, text, verbal, etc.) is not permitted and will constitute Academic Misconduct.
- *Invigilation:* Exams will be invigilated through Zoom. Students will be expected to show both themselves and their screens in a way similar to final exams in other courses. There will be at least one practice exam to familiarize students with the online exam process.

Missed Exam and Late Assignments

- Missed exams: If a student misses an exam without an acceptable excuse according to the UBC Okanagan's policy on excused absences from examinations, the mark received will be zero. If an acceptable excuse is provided to the instructor, then for:
  - *Midterm exams*: the grade will be combined with the marks of the final exam so that the exams are still worth **68 %** of the total grade. If a student misses both midterms with acceptable excuse, a make-up exam *might be* arranged for the second midterm. Note that a make-up exam may have a question format different from the regular exam.
  - *Final exams*: all requests for changes to final exams must be sent to the office of the Associate Dean of Students (bsasdeansoffice.ubco@ubc.ca). Note that a make-up exam may have a question format different from the regular exam.
- Missed clicker questions: no answers will be accepted except those provided during the lecture time using your own clicker device. Remember that you will get the full mark if you correctly answer 80% of all questions.
- Late assignments: Except for extreme situations (e.g., illness, childbirth, or bereavement supported by written proof such as a doctor's note), the following policy is applied to late assignments:
  - **0-24 hours late:** 25% mark deduction (e.g. if an assignment is worth 20 marks, then 5 marks will be deducted from the assignment mark; no negative marks will be given)
  - **24-48 hours late**: 50% mark deduction
  - **More than 48 hours:** no mark.

Final Examinations Period

The examination period is determined in the university calendar (http://www.calendar.ubc.ca/okanagan). Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.

Further information on Academic Concession can be found under Policies and Regulation in the Okanagan Academic Calendar http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0

Expectations

The best outcome for me as an instructor is that all students pass the course, receive good grades, and I go on to see you all in future courses. For that to happen, please help me by putting effort into this course. I expect that you will attend all classes, and participate in class discussions, read the lecture notes **before** the lecture, attend all labs, finish assignments on time, and practice the

course materials. I also expect that you will spend (on average) **at least six hours per week** in out-of-class relevant activities (homework, preparation, practicing).

Required Equipment

- *For Exams:* all students must have access to **computers** with **reliable internet, a microphone, and webcam.** You must also have access to a quiet room with no one around you during the exams.
- *For class exercises:* all students are expected to have an **iClicker Cloud** account (instructions can be found here: https://lthub.ubc.ca/guides/iclicker-cloud-student-guide/)
- In order to engage fully with this course online, students are required to have a laptop or desktop computer and a stable internet connection. Students are encouraged to check out this link: https://keeplearning.ubc.ca/setting-up .

Textbook and Reference Materials

- Course website and discussion forum on Canvas
- Lecture Notes (available electronically)
- Textbook: Y. D. Liang, Intro to Java Programming and Data Structures, 11th Edition, ISBN: 0134670949, 2017 (*Earlier editions are ok*).
    - If you wish, you can order a physical copy online, e.g. from Pearson's website, Amazon, etc.
    - eBook format can be obtained through the UBC bookstore (https://shop.bookstore.ubc.ca/t-campus-ebookstore-okanagan.aspx) or VitalSource(https://www.vitalsource.com).
    - This book also comes with supplemental materials
        - Companion website (answers to review questions, solutions to some programming exercises, and interactive quizzes): https://wps.pearsoned.com/ecs_liang_ijp_10

    Optional resources/textbooks:

    - (free, online): David J. Eck, Introduction to Programming Using Java, Sixth Edition, available at http://math.hws.edu/javanotes/
    - P. Deitel and H. Deitel , Java How To Program (late objects) (10th Edition), ISBN: 0132575655, 2014
    - Many websites provide coding activities for fun. Here are two examples: codewars.com, codingame.com. (I am not affiliated with either website, and note that some questions on these websites are not covered in this course)

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For

example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at: http://okanagan.students.ubc.ca/calendar/index.cfm?tree=3,54,111,0 and at https://science.ok.ubc.ca/student-resources/academic-integrity

Cooperation vs. Cheating

Working with others on assignments is a good way to learn the material and we encourage it. However, there are limits to the degree of cooperation that we will permit. Any level of cooperation beyond what is permitted is considered cheating.
When working on programming assignments, you must work only with others whose understanding of the material is approximately equal to yours. In this situation, working together to find a good approach for solving a programming problem is cooperation; listening while someone dictates a solution is cheating. **You must limit collaboration to a high-level discussion of solution strategies** and stop short of actually writing down a group answer. Anything that you hand in, whether it is a written problem or a computer program, must be written by you, from scratch, in your own words/code. **If you base your solution on any other written solution, you are cheating. If you provide your solution for others to use, you are also cheating.**

Important Dates

http://www.calendar.ubc.ca/okanagan

Tentative Schedule

The course schedule contains the most up-to-date information and important dates for main events such as assignment due dates and tests. Note that these dates and topics are subject to change. Any such change will be announced to students.

Lab Exercises**:** Before every assignment, you should start by practicing on easy exercises related to what we covered in the lecture. You are **not** required to submit your solution for these exercises. On contrary, I will provide the solutions along with the questions. However, to properly learn, you must try on your own first then compare your solutions to mine. If you have a bug in your code or something is not clear to you, don't hesitate to ask your TA, peers, or me. The aim is for you to practice on simple questions before attempting the assignment. Exercises are denoted E1, E2, etc. in the schedule below.

Assignments: In addition to the lab exercises, you should also work on a new assignment in every lab. Solutions for these assignments are *not* given to you. Instead, you should submit your solution to Canvas

before the due date. Marks are given based on the *correctness* of the solution as well as the structure and formatting of your code. The aim is to evaluate your work and help you to learn (based on the feedback you receive from the TA). Assignment and exercise questions are carefully designed to prepare you for exams. Assignments are denoted A1, A2, etc. in the schedule below.

No Group Work is Allowed**:** For all lab work, you may talk with others about the given problems and which parts of the course they are related to, but in all cases, you must **write your own code and never share your code**! Please note that we use **special software to detect plagiarism** in all submitted code.

Due Dates: the due dates of the assignments are usually **one week from YOUR LAB day. All due dates are at** 11:59 pm. The due dates are written in the schedule below in the form "**due in W_n**" where W stands for "week" and n is the week number. For example, **A1 is "due in W3"** means that A1 is due in the third week, which is one week after YOUR lab section at 11:59 pm. Notice that because there are two labs each week, they may be due in the same week. In this case, **A2 is "due in W3"** means that A2 is due in the third week, one week after YOUR lab section in which you were assigned A2 (in this example, A2 is due one week from your second lab of W2).

Week	Lecture #	Date	Topics	Readings	Labs
W1	L1	July 5	Intro to the Course, OOP basics, Inheritance, Array of Objects, final, visibility, Object	CH 9.1-11.6	No Labs during week W1
	L2	July 8	Polymorphism, Dynamic binding, object casting, instanceOf, equals	CH 9.1 - 11.10	
W2	L3	July 12	Abstract Classes and interfaces. Comparable, Cloneable	CH 11.7-11.10, 13	A1: due in W3
	L4	July 15	Exception Handling, Practice Midterm (45 min, L1-L4)	CH 12, 17	A2: due in W3
W3	L5	July 19	Midterm Quiz (45 min, online, L1 to L4), TextI/O	CH 17	A3: due in W4
	L6	July 22	Binary I/O	CH 18	
W4	L7	July 26	Recursion	CH 11.11-11.15, CH 19	A4: due in W5
	L8	July 29	ArrayLists, Generics	CH 20	A5: due in W5
W5	L9	August 2	BC Day, no classes or labs		
	L10	August 5	Midterm Quiz (75 min, online, L1 to L8, focus on L5 to L8)		A6: due in W6
W6	L11	August 9	Lists, Stacks, Queues, Implementing LinkedLists, ArrayLists, Stacks, Queues	CH 24	A7: due August 15
	L12	August 12	Sorting	CH 23	