COSC 121 – Computer Programming II
Winter 2018 – Term 2

UBC OKANAGAN

Instructor: Dr. Abdallah Mohamed

Class time/location: T/R 09:30-11:00 ART-366

Lab time/location:
L01: M 10:30-12:30	TA:	Nenmaan Gomwalk
L02: W 10:30-12:30	TA:	Shima Amirsadri
L03: F 10:30-12:30	TA:	Shambhavi Singh
L04: T 11:30-13:30	TA:	Shambhavi Singh
L05: T 17:00-19:00	TA:	Dhruv Virani
L06: T 15:00-17:00	TA:	Dhruv Virani
L07: R 11:30-13:30	TA:	Kevin Feddema
L08: R 15:00-17:00	TA:	Kathryn Ng
L09: R 17:00-19:00	TA:	Andrew Johnston
L10: W 16:30-18:30	TA:	Andrew Johnston
L11: F 16:30-18:30	TA:	Raghav Jhavar

Office hours/location: **M**: 12:30-13:30, **W**: 13:30-14:20, **F**: 14:30-15:20, or by appointment at **SCI 108**

E-mail: *Instructor*: **abdallah.mohamed@ubc.ca (preferred contact method)**
                          TAs: use the hyperlinks above.

Phone: (250) 807-8247

Course Website: Canvas (https://canvas.ubc.ca)
                          https://people.ok.ubc.ca/abdalmoh/teaching/121

Course Description

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.

Please note that 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

- In-class quizzes   5 % (***using clickers***. Full mark for correctly answering 80% of all questions)
- Lab work:
  - Lab Exercises   5 %
  - Assignments   15 %
  - Project   10 %
- Exams
  - Midterm   15 % - 25 % (75 minutes in-class)
  - Final   40 % - 50 % (cumulative, three hours)

There is **65%** of the course grade for all exams. The exams mark is calculated based on the ***best*** of the two options below. This means if a student does not do very well on one of the two exams but does well on the other, s/he can still get a good overall course grade.

	Option 1	Option 2
Midterm	15 %	25 %
Final	50 %	40 %

In order to pass the course, a student must receive: (1) an overall course grade of at least 50%, and (2) a combined grade of at least 50% on the exams (midterm and final). Otherwise, the student will be assigned a maximum mark of 45.

All exams (midterms and final) are closed-book, paper-based exams. No course materials, calculators, cell phones, or other electronic devices are allowed during the exam time.

If you have any complaint related to this course, e.g., you feel your mark was unfair or incorrectly recorded, **please ensure that I am aware of the problem as soon as possible. All complaints about marks, except about that of the final exam, must be registered with me before the scheduled date of the final examination.** If any complaint is not resolved to your satisfaction, you should go the unit Head.

Expectations

It is my best day when all my students pass the course, receive good grades, and feel the course was useful. For that to happen, help me by putting enough effort for the 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 all your assignments on time, and practice on the course materials. I also expect that you will spend (in average) **at least six hours per week** in out-of-class relevant activities (homework, preparation, practicing).

Missed Exam and Late Assignments

Missed exams: If a student misses an exam without acceptable excuse according 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 **65 %** of the total grade.
- Final exams, the student may retake a make-up final exam with the permission of the Dean's office. Note that a make-up exam may have a question format different from the regular exam.

Late assignments/project: Except for extreme situations (e.g., illness, childbirth, or bereavement supported by a written proof such as a doctor's note), the following policy is applied to late assignments or project:

- **0 to 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 to 48 hours late**: 50% mark deduction
- **More than 48 hours**: no mark.

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.

Textbook and Reference Materials

- Course website and discussion forum on Blackboard Connect
- Lecture Notes (available electronically).
- Textbook:
  - Y. D. Liang, Intro to Java Programming and Data Structures, 11th Edition, ISBN: 0134670949, 2017 (*Earlier editions are ok*).
  - **Students are advised to check the *Companion Website* of the textbook**
    e.g., answers to review questions, solutions to some programming exercises, and interactive quizzes: http://wps.pearsoned.com/ecs_liang_ijp_10

- Optional: P. Deitel and H. Deitel , Java How To Program (late objects) (10th Edition), ISBN: 0132575655, 2014
- Optional (online): David J. Eck, Introduction to Programming Using Java, Sixth Edition, available at: http://math.hws.edu/javanotes/

- **A clicker is required.**

Course Discussion Forum

The course discussion forum is used for exchanging ideas, asking questions, and receiving answers related to the course from other students. If you don't understand something, you may ask on the forum so that everyone can benefit from the answer. If you are not clear about an answer that was given, don't create a new thread. Just add a reply to the original thread asking for clarification.

In all cases, respectful and academic atmosphere must be maintained. You should not post private information on the discussion forum. You must not share answers to assignments with anyone, on the forum or anywhere else.

Class time

Lectures will involve, besides explaining course materials, working on design examples and in class exercises. Class attendance and taking notes are expected, and students are responsible for all material covered in class. You are also expected to respect the other members of the class as well as the instructor. Inappropriate class behavior is not allowed (e.g., talking on cell phones, engaging in non-class activities, sleeping, use disrespectful language, etc.).

Communication

Email is the best way of communication; you can use my email above. You can also see me outside the office hours if my door is open and I have time to meet with you. However, to guarantee I can spend time with you, email for an appointment. For a prompt response, **put your course number in the subject of the email** (i.e., COSC121: subject).

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 usually result in a failing grade or mark of zero on the assignment or in the course.** Careful records are kept to monitor and prevent recidivism. A more detailed description of academic integrity, including the policies and procedures, may be found at http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,54,111,959. **If you have any questions about how academic integrity applies to this course, consult with the instructor.**

Disability Services

If you require disability-related accommodations to meet the course objectives, please contact the Coordinator of Disability Resources located in the Student Development and Advising area of the student services building. For more information about Disability Resources or academic accommodations, please visit the website at http://you.ubc.ca/ubc-life/support/students-disabilities/ok/

Ombuds Office

The Ombuds Office offers independent, impartial, and confidential support to students in navigating UBC policies, processes, and resources, as well as guidance in resolving concerns related to fairness.

UBC Okanagan Ombuds Office:
UNC 227B 250.807.9818
email: *ombuds.office.ok@ubc.ca*
Web: http://ombudsoffice.ubc.ca/ubc-okanagan-2

Equity and Inclusion

UBC Okanagan is a place where every student, staff and faculty member should be able to study and work in an environment that is free from discrimination and harassment. UBC prohibits discrimination and harassment on the basis of the following grounds: age, ancestry, colour, family status, marital status, physical or mental disability, place of origin, political belief, race, religion, sex, sexual orientation or unrelated criminal conviction. If you require assistance related to an issue of equity, discrimination or harassment, please contact the Equity and Inclusion Office.

UBC Okanagan Equity and Inclusion Office:
UNC 227C 250.807.9291
email: *equity.ubco@ubc.ca*
Web: www.ubc.ca/okanagan/equity

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 assignments due dates and tests. Note that these dates and topics are subject to change. Any such change will be announced to students.

CLICKER QUESTIONS: In almost every lecture, we will have one or more clicker questions asked during class time. You must bring your clicker device otherwise your answers will not be counted by the system. You may discuss the questions and their answers with your class mates while the questions are displayed, but each one must provide his/her solution.

EXERCISES: In almost every lab, you will spend the time practicing on exercises related to what we covered in the lecture. Marks for those exercises are given based on the effort (i.e. the fact that you try!). If you have a mistake or something is not clear to you, don't hesitate to ask your TA or peers. The solutions will eventually be given to you. You should attempt all exercises before the end of the lab time, but you do not have to submit anything to Canvas; just show them to your TA. Remember, marks are based on the effort. The aim is for you to practice 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 almost 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 as well as for you to learn (based on the feedback you receive from the TA). Assignment and exercise questions are carefully designed to prepare you to exams. Assignments are denoted A1, A2, etc. in the schedule below.

PROJECT: You will also work on a project that aims to give you a hands-no experience of using the topics learned in one large program. Labs will decompose this large problem into several smaller ones manageable by students. These parts are indicated as P1, P2, ..., P5 in the schedule below. Guidance will be given during class and lab time for different parts. As the semester advances, less guidance will be provided and you will be more and more expected to come up with your own design.

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 a **special software to detect plagiarism** in all submitted code.

The *only* exception of the group-work rule is clicker questions which, as mentioned above, you may discuss with your peers and before you provide the answer.

DUE DATES: The due dates of the assignments and project parts are usually **one or two weeks 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 11:59pm. There are some exceptions where one specific due date is given for all students as shown below.

WEEK	LECTURE #	DATE	TOPICS	READINGS (based on 10th Ed)	LABS
W1	L1	Thu 3 / 1	Intro to the Course OOP (revision): basics, inheritance, array of objects, `static`, `final`, visibility, `Object`	CH 9.1 - 11.6	**No labs during week *W1***
W2	L2	Tue 8 / 1	Polymorphism	CH 9.1 - 11.6	**E1:** due by the end of the lab
W2	L3	Thu 10 / 1	Dynamic binding Object casting, `instanceOf, equals`	CH 11.7 - 11.10	**P1**: due in **W3**
W3	L4	Tue 15 / 1	Abstract Classes, intro to interfaces	CH 11.7-11.10, 13	**E2:** due by the end of the lab
W3	L5	Thu 17 / 1	User-defined Interfaces Built-in interfaces: `Comparable, Cloneable`	CH 13	**A1**: due in **W4**
W4	L6	Tue 22 / 1	Exception Handling	CH 12	**E3:** due by the end of the lab
W4	L7	Thu 24 / 1	Text I/O	CH 12	**A2, P2:** due in **W5**
W5	L8	Tue 29 / 1	Binary I/O	CH 17	**E4:** due by the end of the lab
W5	L9	Thu 31 / 1	Binary I/O, cont.	CH 17	**A3:** due in **W6**
W6	L10	Tue 5 / 2	Recursion	CH 18	**E5:** due by the end of the lab
W6	L11	Thu 7 / 2	Recursion, cont.	CH 18	**A4, P3:** due in **W9**
W7	L12	Tue 12 / 2	**Midterm Revision**		***Revision** (TAs will be available in the labs to answer your questions)*
W7	L13	Thu 14 / 2	**Midterm (in class, covers L1 to L9)**		
W8		Tue 19 / 2	**No class: Midterm Break**		**No Labs: Midterm Break**
W8		Thu 21 / 2			
W9	L14	Tue 26 / 2	ArrayLists , Intro to Generics	CH 11.11 - 11.15 CH 19	**E6:** due by the end of the lab
W9	L15	Thu 28 / 2	ArrayLists , Intro to Generics, cont.		**A5:** due in **W10**
W10	L16	Tue 5 / 3	List, Stacks, and Queues	CH 20	**E7:** due by the end of the lab
W10	L17	Thu 7 / 3	List, Stacks, and Queues , cont.	CH 20	**A6:** due in **W11**
W11	L18	Tue 12 / 3	Implementing List, Stacks, and Queues	CH 24	**E8 part1:** due by the end of the lab
W11	L19	Thu 14 / 3	Implementing List, Stacks, and Queues, , cont.	CH 24	**A7:** due in **W12**
W12	L20	Tue 19 / 3	Sorting	CH 23	**E8 part2:** due by the end of the lab
W12	L21	Thu 21 / 3	Sorting, cont.	CH 32	**A8, P4**: due in **W13**
W13	L22	Tue 26 / 3	**Tentative Topics**: lambda expression, event-driven programming, database programming, Network Programming, Parallel Computing		**E9:** due by the end of the lab
W13	L23	Thu 28 / 3			**A9:** due on **Apr 2**
W14	L24	Tue 2 / 4			***Revision** (TAs will be available in the labs to answer your questions)*
W14	L25	Thu 4 / 4	**Final Revision (incl. Midterm review)**		
			Final exam (cumulative)		