**COSC 121-101**

**Computer Programming II**

**W2020 – T-2**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Instructor:** Dr. Abdallah Mohamed

## Class time/location: Tue/Thu 15:30-17:00 FIP-204

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Lab time/location:** | L2A | Mon | 13:30-15:30 | FIP-129 | TA: | [Amir Zeinali](mailto:zeinalik@mail.ubc.ca) |
|  | L2B | Mon | 16:30-18:30 | ART-215 | TA: | [Larry Gu](mailto:larry.gu@alumni.ubc.ca) |
|  | L2C | Mon | 11:30-13:30 | ASC-165 | TA: | [Kathryn Ng](mailto:kathryn.ng@ubc.ca) |
|  | L2D | Tue | 17:00-19:00 | ASC-165 | TA: | [Swakhar Poddar](mailto:poddarswakhar97@alumni.ubc.ca) |
|  | L2E | Wed | 16:30-18:30 | FIP-133 | TA: | [Ivan Carvalho](mailto:ivancarv@mail.ubc.ca) |
|  | L2F | Fri | 10:30-12:30 | FIP-129 | TA: | [Swakhar Poddar](mailto:poddarswakhar97@alumni.ubc.ca) |
|  | L2G | Thu | 09:30-11:30 | EME-2205 | TA: | [Kanishka Verma](mailto:kanishka.verma@alumni.ubc.ca) |
|  | L2H | Wed | 09:30-11:30 | FIP-133 | TA: | [Thomas Van De Crommenacker](mailto:tpvdc@mail.ubc.ca) |
|  | L2I | Tue | 10:30-12:30 | ASC-165 | TA: | [Amir Zeinali](mailto:zeinalik@mail.ubc.ca) |
|  | L2J | Fri | 12:30-14:30 | FIP-133 | TA: | [Larry Gu](mailto:larry.gu@alumni.ubc.ca) |
|  | L2K | Fri | 14:30-16:30 | SCI-126 | TA: | [Ivan Carvalho](mailto:ivancarv@mail.ubc.ca) |
|  | L2L | Thu | 17:00-19:00 | SCI-126 | TA: | [Tianhao Wang](mailto:tianhaowang@alumni.ubc.ca) |
|  | L2M | Fri | 16:30-18:30 | FIP-133 | TA: | [Owen Murovec](mailto:owen.murovec@ubc.ca) |
|  | L2N | Wed | 16:30-18:30 | SCI-126 | TA: | [Owen Murovec](mailto:owen.murovec@ubc.ca) |

**Office hours/location: Mon**: 10:30-11:20, **Tue**: 12:30-14:00, **Thu**: 14:30-15:20, or by appointment at **SCI 108**

## E-mail: ***Instructor***: [abdallah.mohamed@ubc.ca](mailto:abdallah.mohamed@ubc.ca) (preferred contact method)

*TAs:* use the hyperlinks above.

**Phone:** (250) 807-8247

**Course Website:** Canvas: [https://canvas.ubc.ca](https://canvas.ubc.ca/)

<https://people.ok.ubc.ca/abdalmoh/teaching/121>

**Calendar 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. [3-2-0]  
***Prerequisite:***A score of 60% or higher in one of COSC 111, COSC 123.

**Specific description**: The goal of this course is to give students a creative introduction to programming. Students learn programming basics such as decisions, iteration, objects, methods, and classes through the Processing language. Near the end of the semester, the course transitions to Java language to allow for building larger programs. Students will explore events, graphics, animation, 2D gaming, and file manipulation while practicing programming concepts. Programming is performed in pairs to

encourage collaboration and understanding. Some lectures require finishing a pre-class reading or assignment which will give more time for in-class practices. Students completing this course will understand programming fundamentals, have created interesting and fun programs and animations, and have the ability to continue in following computer science courses.

**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 2 options below. This means if a student does not do well on one of the exams, then this exam will have less weight.

|  |  |  |
| --- | --- | --- |
|  | 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. S

## Students will not be able to receive a passing grade if they are not registered to the required lab section.

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.

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.

Note: Any requests for changes to final exams must be sent to the office of the Associate Dean of Students ([bsasdeansoffice.ubco@ubc.ca](mailto:bsasdeansoffice.ubco@ubc.ca)).

# 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.

# 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).

# 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).

**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.

<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014>

**Final Examinations**

The examination period for **W2020 T-2 is April 16 - 29, 2021**.  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>

**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>.

**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. 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.

**Copyright Disclaimer**

Diagrams and figures included in lecture presentations adhere to Copyright Guidelines for UBC Faculty, Staff and Students <http://copyright.ubc.ca/requirements/copyright-guidelines/> and UBC Fair Dealing Requirements for Faculty and Staff <http://copyright.ubc.ca/requirements/fair-dealing/>.  Some of these figures and images are subject to copyright and will not be posted to ***Canvas.***  All material uploaded to ***Canvas*** that contain diagrams and figures are used with permission of the publisher; are in the public domain; are licensed by Creative Commons; meet the permitted terms of use of UBC’s library license agreements for electronic items; and/or adhere to the UBC Fair Dealing Requirements for Faculty and Staff. Access to the ***Canvas*** course site is limited to students currently registered in this course. Under no circumstance are students permitted to provide any other person with means to access this material. Anyone violating these restrictions may be subject to legal action. Permission to electronically record any course materials must be granted by the instructor. Distribution of this material to a third party is forbidden.

**Grievances and Complaints Procedures**

A student who has a complaint related to this course should follow the procedures summarized below:

* The student should attempt to resolve the matter with the instructor first. Students may talk first to someone other than the instructor if they do not feel, for whatever reason, that they can directly approach the instructor.
* If the complaint is not resolved to the student's satisfaction, the student should e-mail the Associate Head,

Dr. Yves Lucet at [yves.lucet@ubc.ca](mailto:yves.lucet@ubc.ca) or the Department Head, Dr. John Braun at [john.braun@ubc.ca](mailto:john.braun@ubc.ca)

# 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 *Wn****”*, 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.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| EEK | LECTURE # | DATE | | **TOPICS** | **READINGS**  **(based on 10th Ed)** | **LABS** |
|  | L1 | Tue | 7 / 1 | Intro to the Course, OOP basics (revision). Intro to inheritance. |  | **No labs during week *W1*** |
| **W1** | L2 | Thu | 9 / 1 | inheritance, array of objects, final, visibility,  Object | CH 9.1 - 11.6 |
| **W2** | L3 | Tue | 14 / 1 | Polymorphism | CH 9.1 - 11.6 | **E1:** due by the end of the lab  **P1**: due in **W3** |
| L4 | Thu | 16 / 1 | Dynamic binding  Object casting, instanceOf, equals | CH 11.7 - 11.10 |
| **W3** | L5 | Tue | 21 / 1 | Abstract Classes, intro to interfaces | CH 11.7-11.10, 13 | **E2:** due by the end of the lab  **A1**: due in **W4** |
| L6 | Thu | 23 / 1 | User-defined Interfaces  Built-in interfaces: Comparable, Cloneable | CH 13 |
| **W4** | L7 | Tue | 28 / 1 | Exception Handling | CH 12 | **E3:** due by the end of the lab  **A2, P2:** due in **W5** |
| L8 | Thu | 30 / 1 | Text I/O | CH 12 |
| **W5** | L9 | Tue | 4 / 2 | Binary I/O | CH 17 | **E4:** due by the end of the lab  **A3:** due in **W6** |
| L10 | Thu | 6 / 2 | Binary I/O, cont. | CH 17 |
| **W6** | L11 | Tue | 11 / 2 | Recursion | CH 18 | E5**:** due by the end of the lab  **A4, P3:** due in **W9** |
| L12 | Thu | 13 / 2 | Recursion, cont. | CH 18 |
| **W8** |  | **Tue** | **18 / 2** | **No class: Midterm Break** |  | **No Labs: Midterm Break** |
|  | **Thu** | **20 / 2** |
| **W7** | L13 | Tue | 25 / 2 | **Midterm Revision** |  | ***Revision*** *(TAs will be available in the labs to answer your questions)* |
| L14 | Thu | 27 / 2 | **Midterm (in class, covers L1 to L10)** |  |
| **W9** | L15 | Tue | 3 / 3 | ArrayLists , Intro to Generics | CH 11.11 - 11.15  CH 19 | **E6:** due by the end of the lab  **A5:** due in **W10** |
| L16 | Thu | 5 / 3 | ArrayLists , Intro to Generics, cont. |
| **W10** | L17 | Tue | 10 / 3 | List, Stacks, and Queues | CH 20 | **E7:** due by the end of the lab  **A6:** due in **W11** |
| L18 | Thu | 12 / 3 | List, Stacks, and Queues , cont. | CH 20 |
| **W11** | L19 | Tue | 17 / 3 | Implementing List, Stacks, and Queues | CH 24 | **E8 part1:** due by the end of the lab  **A7:** due in **W12** |
| L20 | Thu | 19 / 3 | Implementing List, Stacks, and Queues, , cont. | CH 24 |
| **W12** | L21 | Tue | 24 / 3 | Sorting | CH 23 | **E8 part2:** due by the end of the lab  **A8, P4**: due in **W13** |
| L22 | Thu | 26 / 3 | Sorting, cont. | CH 32 |
| **W13** | L23 | Tue | 31 / 3 | Lambda expression (tentative) |  | **E9:** due by the end of the lab  **A9:** due on **Apr 7** |
| L22 | Thu | 2 / 4 | Lambda, cont. |  |
| **W14** | L23 | Tue | 7 / 4 | **Final Revision (incl. Midterm review)** |  | ***Revision*** *(TAs will be available in*  *the labs to answer your questions)* |

**Student Service Resources**

**Disability Assistance**

The Disability Resource Centre ensures educational equity for students with disabilities, injuries or illness. If you are disabled, have an injury or illness and require academic accommodations to meet the course objectives, e-mail us or visit our website for more information.

**Web:** <http://students.ok.ubc.ca/drc/welcome.html> **E-mail** DRC at: [drc.questions@ubc.ca](mailto:drc.questions@ubc.ca)

**Equity, Human Rights, Discrimination and Harassment**

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 human rights-based discrimination and harassment. If you require assistance related to an issue of equity, discrimination or harassment, please contact the Equity Office, your administrative head of unit, and/or your unit’s equity representative. **UBC Okanagan Equity Advisor: ph. 250-807-9291**

**Web:** <https://equity.ok.ubc.ca/> **E-mail:**  [equity.ubco@ubc.ca](mailto:equity.ubco@ubc.ca)

**Health & Wellness - UNC 337**

At UBC Okanagan health services to students are provided by Health and Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Health and Wellness for more information or to book an appointment.

**Web:** [www.students.ok.ubc.ca/health-wellness](http://www.students.ok.ubc.ca/health-wellness) **Email:** [healthwellness.okanagan@ubc.ca](mailto:healthwellness.okanagan@ubc.ca)

**Sexual Violence Prevention and Response Office (SVPRO)**

A safe and confidential place for UBC students, staff and faculty who have experienced sexual violence regardless of when or where it took place. Just want to talk? We are here to listen and help you explore your options. We can help you find a safe place to stay, explain your reporting options (UBC or police), accompany you to the hospital, or support you with academic accommodations. You have the right to choose what happens next. We support your decision, whatever you decide. Visit [svpro.ok.ubc.ca](https://svpro.ok.ubc.ca/) or call us at 250-807-9640

**Independent Investigations Office (IIO)**

If you or someone you know has experienced sexual assault or some other form of sexual misconduct by a UBC community member and you want the Independent Investigations Office (IIO) at UBC to investigate, please contact the **IIO**. Investigations are conducted in a trauma informed, confidential and respectful manner in accordance with the principles of procedural fairness. You can report your experience directly to the **IIO by** calling 604-827-2060.

**Web:** <https://investigationsoffice.ubc.ca/> **E-mail:** [director.of.investigations@ubc.ca](mailto:director.of.investigations@ubc.ca)

**The Hub**

The Student Learning Hub (LIB 237) is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies**. **Web:** (<https://students.ok.ubc.ca/student-learning-hub/>) **Ph:** 250-807-9185.

**SAFEWALK -** Download the UBC SAFE – Okanagan app.

Don't want to walk alone at night? Not too sure how to get somewhere on campus?

**Call Safewalk at 250-807-8076**  For more information: <https://security.ok.ubc.ca/safewalk/>