# COSC 123 – Introduction to Computer Science
## Winter 2010 Term 2

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| **Instructor:** | **Dr. Ramon Lawrence** |
| **Class Schedule:** | 10:30 a.m. – 11:30 a.m. Monday/Wednesday/Friday |
| **Location:** | ART 208 and ART 215 (Computer Lab) |
| **Lab time/locations:** | **L01:** 2:30 p.m. – 4:30 p.m. Monday at SCI 126 |
| | **L02:** 2:30 p.m. – 4:30 p.m. Thursday at SCI 126 |
| **Office Hours:** | 11:30–12:30 p.m. Wednesday/Friday or by appointment |
| **Office Location:** | ASC 349 |
| **Phone:** | 807-9390 |
| **E-mail:** | ramon.lawrence@ubc.ca (preferred contact method) |
| **Course URL:** | http://people.ok.ubc.ca/rlawrenc/teaching/123/ |

## Course Description

*Official Calendar:* A broad introduction to computer science: hardware, software development, programming, operating systems, databases, and networks. Laboratory allows creative development with computers.

*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 Alice storyboard language. Then, the course transitions to using the Java language to allow for building larger programs. Students will explore events, graphics, file manipulation, and network communication while practicing programming concepts. Programming is performed in pairs to encourage collaboration and understanding. Students completing this course will understand programming fundamentals, have created interesting and fun programs, and have the ability to directly continue in following computer science courses.

## Prerequisites
- COSC 111 or COSC 122.

## Marking and Evaluation

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| **In-class quizzes and questions** | **20 %** | (questions asked during lectures) |
| **Lab Assignments** | **20 %** | |
| **Two Midterm Exams** | **30 %** | (15% each) |
| **Final Exam** | **30 %** | (cumulative, three hours) |

**No late assignments will be accepted.**

## Textbook and Reference Materials
- Lecture notes (available electronically)
- Clicker
- Not required but on reserve in library: John Lewis and Peter Depasquale, *Programming with Alice & Java*, Pearson Education, 1st edition, ISBN 0-321-51209-X, 2009.

## Expectations

- I expect students to attend **all** classes and prepare before attending class.
- Students should read a copy of the lecture notes **before** the lecture.
- I expect students to learn the material in the course by completing all assignments.
- I want all students to enjoy attending class and feel free to participate according to their own personalities. Feel free to ask questions by raising your hand or speaking out at appropriate times.
- Please actively participate in class discussions, questions, and problem solving exercises.
- **I want all students to pass the course, receive a good grade, and feel the course was beneficial.**

## Homework Expectation

For this course, it is expected that you will spend *at least four hours per week in out-of-class preparation*.

## 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 go to the departmental chair Jan Cioe at ARTS 332, 807-8732.

## Your Responsibilities

Your responsibilities to this class and to your education as a whole include attendance and participation. You have a responsibility to help create a classroom environment where all may learn. At the most basic level, this means you will respect the other members of the class and the instructor and treat them with the courtesy you hope to receive in return. Inappropriate classroom behavior may include: disruption of the classroom atmosphere, engaging in non-class activities, talking on a cell-phone, inappropriate use of profanity in classroom discussion, use of abusive or disrespectful language toward the instructor, a student in the class, or about other individuals or groups.

## 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 break down 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 policies and procedures, may be found at http://web.ubc.ca/okanagan/faculties/resources/academicintegrity.html. **If you have any questions about how academic integrity applies to this course, please consult with your professor.**

## 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 about academic accommodations visit http://okanagan.students.ubc.ca/current/disres.cfm.

## Equity, Human Rights, Discrimination and Harassment

UBC does not condone discrimination or harassment in classrooms, living or work environments on campus. For information about UBC's policies related to equity, human rights, discrimination or harassment please contact:
Equity Advisor: ph. 250-807-9291; email equity.ubco@ubc.ca  Web: www.ubc.ca/okanagan/equity

## Missing an Exam

Only students who miss the final exam for a reason that corresponds to the University of British Columbia Okanagan's policy on excused absences from examinations will be permitted to take the final exam at a later time. A make-up exam may have a question format different from the regular exam. **There will be no make-up midterm exams.** If the reason for absence is satisfactory, the student's final exam will be worth more of the final grade.

## Course Outline

- The course has a substantial amount of material to be covered in a short time. This requires the student make a strong effort to keep up with the material discussed in class.
- Below is an outline of the topics. The professor is not bound to the timeline provided.

| Date | Topics Covered and Description |
|---|---|
| January 5 (W) | **First day of classes. Introduction to course/Alice. Select programming pairs.** |
| January 7 (F) | Introduction to Programming and Alice - Classes, Objects, and Methods |
| January 10 (M) | Introduction to Programming and Alice - Classes, Objects, and Methods (cont.) |
| January 12 (W) | Methods, Data, and Expressions |
| January 14 (F) | Methods, Data, and Expressions |
| January 17 (M) | Decisions and Loops |
| January 19 (W) | Decisions and Loops |
| January 21 (F) | Decisions and Loops |
| January 24 (M) | Decisions and Loops |
| January 26 (W) | Events |
| January 28 (F) | Events |
| January 31 (M) | Lists and Arrays |
| February 2 (W) | Lists and Arrays |
| February 4 (F) | Alice Programming Practice |
| February 7 (M) | Introduction to Java and Eclipse |
| February 9 (W) | **Midterm #1 – Programming with Alice – Written Component** |
| February 11 (F) | **Midterm #1 – Programming with Alice – Computer Component** |
| February 14 (M) | **No class during midterm break.** |
| February 16 (W) | **No class during midterm break.** |
| February 18 (F) | **No class during midterm break.** |
| February 21 (M) | Introduction to Java and Eclipse |
| February 23 (W) | Introduction to Java and Eclipse |
| February 25 (F) | Decisions and Loops in Java |
| February 28 (M) | Decisions and Loops in Java |
| March 2 (W) | Decisions and Loops in Java |
| March 4 (F) | Classes, Objects, and Methods in Java |
| March 7 (M) | Classes, Objects, and Methods in Java |
| March 9 (W) | Classes, Objects, and Methods in Java |
| March 11 (F) | Inheritance |
| March 14 (M) | Lists and Arrays |
| March 16 (W) | Graphics – Applets |
| March 18 (F) | Graphics – User Interfaces |
| March 21 (M) | Events |
| March 23 (W) | Menus, Keyboard Events |
| March 25 (F) | **Midterm #2 – Programming with Java** |
| March 28 (M) | Exceptions and I/O |
| March 30 (W) | Exceptions and I/O |
| April 1 (F) | Java Programming Practice |
| April 4 (M) | Course Review |
| April 6 (W) | Course Summary and Review. **Last Day of Class. Final Exam Review.** |

# Programming

Students will be taught the Java programming language that is used in COSC 111, 121, and all upper level computer science courses.  Students who learned JavaScript in COSC 122 will be able to easily transfer this knowledge to Java.

All lab assignments and projects will be done using the ***pair-programming approach***.  Students will select a partner at the start of class that will be their partner for the duration of the course.  Students may ask the professor for help in finding a suitable partner.  Accommodation is made for students whose partner leaves the course before its completion.

All lab assignments will involve using computers to enhance lecture material.  The majority of the lab assignments involve some form of programming.  Some of the lab time is dedicated to a multi-week project.  This multi-week project allows students to explore their creativity with the concepts learned. Students may select one of two projects:
- developing an online chat program or Internet application
- creating a video, adventure, or strategy game

Students will be provided with the necessary starting programs and instruction to allow the creation of these large projects given their current abilities.

*Laboratory times:*  The laboratory time will be spent working on computers. Each lab will have a defined topic and an associated assignment that must be completed by the following lab.

| Week | Dates | Topics Covered and Description |
|------|-------|-------------------------------|
| 1 | January 3-7 | **No Lab First Week of Class** |
| 2 | January 10-14 | Lab 1: Introduction to Alice |
| 3 | January 17-21 | Lab 2: Methods |
| 4 | January 24-28 | Lab 3: Decisions and Loops |
| 5 | Jan. 31 – Feb. 4 | Lab 4: Events and Arrays |
| 6 | February 7-11 | Alice Project Work Lab |
| 7 | February 14-18 | **No Lab During Midterm Break** |
| 8 | February 21-25 | Lab 5: Java Variables, Input/Output, and Strings |
| 9 | Feb. 28 - March 4 | Lab 6: Java Decisions and Loops |
| 10 | March 7-11 | Lab 7: Classes and Inheritance |
| 11 | March 14-18 | Lab 8: Lists and Arrays |
| 12 | March 21-25 | Lab 9: Graphics |
| 13 | March 28-April 1 | Lab 10: Events |
| 14 | April 4-8 | **No Lab Last Week of Class** |