COSC 123 – Introduction to Computer Science
Winter 2008 (Term 2)

Instructor: Dr. Ramon Lawrence
Class Schedule: 9:30 a.m. – 10:30 a.m. Monday/Wednesday/Friday
Location: FIP 133
Lab time/locations: **L01:** 2:30 p.m. – 4:30 p.m. Monday at SCI 126
L02: 4:30 p.m. – 6:30 p.m. Wednesday at SCI 126 (blocked)
L03: 2:30 p.m. – 4:30 p.m. Friday at SCI 126
Office Hours: 2:00–3:30 p.m. Monday/Friday or by appointment
Office Location: SCI 263
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, object, 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. There is an emphasis in both the lectures and laboratories of instruction on the computer. 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
In-class quizzes	**5%**	(questions asked during lectures)
Lab Assignments	**30 %**	
Two Midterm Exams	**30 %**	(15% each)
Final Exam	**35 %**	(cumulative, three hours)

No late assignments will be accepted.

Textbook and Reference Materials
- John Lewis and Peter Depasquale, *Programming with Alice & Java*, Pearson Education, 1st edition, ISBN 0-321-51209-X, 2009.
- Lecture notes (available electronically)
- Clicker

Expectations
- I expect students to attend **all** classes and prepare before attending class. This includes reading relevant sections of the textbook and reviewing notes from previous lectures.
- I recommend students read a copy of the lecture notes **before** the lecture.
- I expect students to learn the material in the course and undertake sufficient effort to produce all the 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 including the laboratory time*.

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 Barbara Rutherford, at ART 334, 807-8734.

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.

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 topics and timelines provided.

Date	Topics Covered and Description
January 5 (M)	**First day of classes. Introduction to course/Alice. Select programming pairs.**
January 7 (W)	Classes, Objects, and Methods (Chapter 1)
January 9 (F)	Methods, Data, and Expressions (Chapter 2)
January 12 (M)	Decisions and Loops (Chapter 3)
January 14 (W)	Decisions and Loops (Chapter 3)
January 16 (F)	Decisions and Loops (Chapter 3)
January 19 (M)	Events (Chapter 4)
January 21 (W)	Events (Chapter 4)
January 23 (F)	Lists and Arrays (Chapter 5)
January 26 (M)	Lists and Arrays (Chapter 5)
January 28 (W)	Introduction to Java and Eclipse (Chapter 6)
January 30 (F)	Decisions and Loops in Java (Chapter 6)
February 2 (M)	Decisions and Loops in Java (Chapter 6)
February 4 (W)	Decisions and Loops in Java (Chapter 6)
February 6 (F)	**Midterm #1 – Programming with Alice**
February 9 (M)	Classes, Objects, and Methods in Java (Chapter 6)
February 11 (W)	Classes, Objects, and Methods in Java (Chapter 6)
February 13 (F)	Inheritance and Polymorphism (Chapter 9)
February 16 (M)	**No class during midterm break.**
February 18 (W)	**No class during midterm break.**
February 20 (F)	**No class during midterm break.**
February 23 (M)	Inheritance and Polymorphism (Chapter 9)
February 25 (W)	Graphics (Chapter 6)
February 27 (F)	Graphics (Chapter 6)
March 2 (M)	Events (Chapter 7)
March 4 (W)	Events (Chapter 7)
March 6 (F)	Events (Chapter 7)
March 9 (M)	Lists and Arrays (Chapter 8)
March 11 (W)	Lists and Arrays (Chapter 8)
March 13 (F)	**Midterm #2 – Programming with Java**
March 16 (M)	Exceptions and I/O (Chapter 10)
March 18 (W)	Exceptions and I/O (Chapter 10)
March 20 (F)	Exceptions and I/O (Chapter 10)
March 23 (M)	Artificial Intelligence - Path finding
March 25 (W)	Artificial Intelligence - Path finding
March 27 (F)	Recursion
March 30 (M)	Recursion
April 1 (W)	Algorithm Analysis
April 3 (F)	Project Development
April 6 (M)	Project Presentations
April 8 (W)	Course Summary. **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 a number of projects including:
- developing an online chat program or Internet application
- creating a video, adventure, or strategy game
- designing a database application for business, science, or personal use

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.