Instructor & Coordinator	Dr. Aiman Hanna E-mail: contact@AimanHanna.com Office: EV 3-257 Tel: (514) 848-2424 ext. 7878 <u>Lectures:</u> Section U: Wednesday - Friday 10:15 AM - 11:30 AM at H-820 Section W: Wednesday - Friday 11:45 AM - 1:00 PM at H-820 <u>Office Hours:</u> 1) Friday: 1:30 PM - 2:30 PM; 2) By appointment anytime.
Lab Instructors & Markers	→ Please check the websites for information on lab instructors/tutors/markers as well as lab/tutorials times and locations.

Course Objective

The primary objective of this course is to enable you to understand the basic principles of programming. The language used for the course is Java, chosen because it supports object-oriented programming and because it is becoming widely used in industry.

The course will include discussions and explanations of the following topics: introduction to programming; writing, compiling, and running simple programs; expressions, variables, and assignments; control structures; objects and classes, methods, and arrays.

Background Knowledge

You should have some experience with using a computer. It is helpful, but not necessary, to have some experience in programming with a language such as C or C++. The tutors will provide a gentle introduction in the first one or two tutorials for those who are not familiar with the programming environment to be used.

Required Text Book & Other Tools

- *Absolute Java* by Walter Savitch, *6th Edition or later*, Addison Wesley. The course mainly covers the material in the first six chapters of the book. The book is available in 2 formats:
  - o   Hard Copy: ISBN: 978-0-13-404167-4
  - o   Digital Copy: ISBN: 978-0-13-394783-0
- *i-Clicker* which you need to bring to every tutorial.

The hardcopy of the book and the i-clickers are both available at the Concordia bookstore.

Graduate Attributes

As part of either the Computer Science, or the Software Engineering program curriculum, the content of this course includes material and exercises related to the teaching and evaluation of graduate attributes. Graduate attributes are skills that have been identified by the Canadian Engineering Accreditation Board (CEAB) and the Canadian Information Processing Society (CIPS) as being central to the formation of Engineers, Computer Scientists and Information Technology professionals. As such, the accreditation criteria for the Software Engineering and Computer Science programs dictate that graduate attributes are taught and evaluated as part of the courses.

This course emphasizes and develops the following graduate attributes:

- **Knowledge-base for Engineering:** *Knowledge of basic principles of programming, especially object-oriented programming, including basic data types, variables, expressions, assignments, control flow, classes, objects, methods, information hiding, data abstraction and encapsulation, references and arrays.*
    - ➢ **Indicators:** Indicator 1.3: Knowledge-base in a specific domain.

- **Problem analysis:** *Determine appropriate algorithms to solve a simple problem and determine what control structures and (simple) data structures to implement the algorithm.*
    - ➢ **Indicators:** Indicator 2.1: Problem identification and formulation.

- **Design:** *Design and implement simple programs using an object-oriented programming language.*
    - ➢ **Indicators:** Indicator 4.4: Implementation and validation.

- **Use of Engineering tools:** *Determine what appropriate language constructs to use to solve specific problems.*
    - ➢ **Indicators:** Indicator 5.1: Ability to use appropriate tools, techniques and resources.

- **Communication skills:** *Internal code documentation.*
    - ➢ **Indicators:** Indicator 7.3: Documentation.

Computing Facilities

You should obtain a computer account for COMP 248 from the help desk at H–960 or EV-007.182. This account will give you access to the laboratories. For more information on CSE Computer accounts please visit the website: *http://www.encs.concordia.ca/helpdesk/access.html*

If you have a computer at home and prefer to use it, you may do so, but be aware that your programs must compile and run at the Concordia laboratory, so you have to verify that before submitting your assignments.

Tutorials

The tutorials will reinforce the material seen during the lectures with examples and exercises. The tutorials are also designed in a way that would assist you to get deeper knowledge and experience of problem analysis and problem solving. It is hence strongly recommended that you attend all the tutorials. Tutorials begin on the second week of classes.
Please consult the course websites for tutorial times and locations

Labs

Lab times are there for two main reasons:

1) To assist you with any course materials related programming questions/assignments. The lab instructor will be available during these lab times to provide with such needed assistance.
2) To conduct lab exercises (please read very carefully): There will be six to eight lab exercises during the course. These exercises must to be done individually and submitted during the lab period. In specific, these exercises can only be done during the specified lab period and must be submitted electronically to the correct lab folder on the Electronic Assignment Submission System (EAS) by the end of the lab time.

   Now, please read even more carefully: **These lab exercises will not be marked (or only selected exercises may be marked) and hence may not evaluate to any load of the course. The main purpose behind these lab exercises is to provide you with better programming skills, grasp of the course materials, and good preparation for your exams.** You are required to perform and submit ALL of these lab exercises. Although these lab exercises may not represent any load after all, failing to perform and submit any of them will **cost you some significant marks**. There is no make-up for a missed lab exercise.

Web Pages & Online Resources

Lecture notes, assignments, and other course information and materials will be available at: http://www.AimanHanna.com (Follow Concordia links afterwards).

A mailing list will be established for the course. You should register to this mailing list ASAP. To register, please link to:

https://mail.encs.concordia.ca:444/mailman/listinfo/comp248-w16.

Usage of *i-Clickers*

i-Clickers will be used in the tutorials, and possibly during the lectures as well, so you must have your *i-Clicker* at both times. You must register your *i-Clicker* for the course. The tutors will inform you of when and how you can do so.

Important Lecture Guidelines

Laptops are **STRICTLY PROHIBITED** in classroom during the lectures. Other communications devices, such as cellular phones, communication watches, and text/video messaging devices, tablets, pads, and similar devices are also **STRICTLY PROHIBITED**. The usage of any of these materials during the class will result in you being asked to immediately leave the class.

Assignments & Examinations

a) Assignments

There will be 4 or 5 assignments for this course. The assignments will examine the programming materials and subjects covered in class and will allow you to develop strong foundation of problem analysis and solving. While all assignments have a programming component; some of them may have a theoretical component as well. Assignments are to be submitted electronically by the due date - no paper submissions are allowed.

Instructions on submitting assignments will be given in the first assignment. All assignment handouts will be available on the course webpage and must be retrieved from there. No hard copies of the assignments will be provided.

IMPORTANT: For some of the assignments, demo will be required. The marker will communicate with you through the mailing list and you must book a demo time with him/her. If demo is required for an assignment, then you must perform the demo (if groups are allowed for an assignment, both members of a group must be present during the demo). Failing to demo the assignment will result in a 0 mark regardless of your submission.

Although we encourage discussion of the assignment questions among students, you should be aware of the University regulations concerning plagiarism described in 16.3.13 of the undergraduate Calendar. All students should become familiar with the University's Code of Conduct located at

http://web2.concordia.ca/Legal_Counsel/policies/english/AC/Code.html.

In cases where cheating or plagiarism is suspected, the case will be forwarded directly to the appropriate university office for consideration. Please do not assume that you get "second chances" when it comes to cheating. Once is often enough to damage your academic career.

b) Examinations

- There will one midterm test in week 8 or 9 of the course. Exact date will be announced in class. There is no make-up term test.

- The final examination will be administered during the examination period at the end of the term. The final examination covers all material seen during the term, and will

examine your developed skills of problem analysis, in addition to your programming knowledge of the subjects covered during the entire course.

Evaluation Scheme

Assignments   16%
Midterm exam   25%
i-Clicker participation 4%
Final exam   55%

1. In order to pass the course, you must pass the exams regardless of your grade in the assignments.
2. Again, recall that missing lab exercises will cost you some significant marks.
3. There is no standard relationship between percentages and letter grades assigned.

Tentative Schedule

The list below provides a summary of the material that will be covered during the course as well as a *very tentative* schedule. Please check course webpage and follow actual class coverage for any changes.

Week #	Topic	Lab Exercise*	Special Event
1	Java Basics	No Lab	
2			i-Clicker IDs Registration ‡
3	Console input & Output	Lab Exercise 1	Assignment 1 due **
4	Flow of Control (Selection)	Lab Exercise 2	
5	Flow of Control (Iteration)		
6	Arrays of primitive types	Lab Exercise 3	Assignment 2 due **
7	Defining Classes	Lab Exercise 4	
8	Defining Classes	Lab Exercise 5	
9	More on Classes		Assignment 3 due ** **MIDTERM**
10	More on Classes	Lab Exercise 6	
11	Arrays of objects	Lab Exercise 7	
12	More on Classes		Assignment 4 due **
13	Catch Up and/or Review	Lab Exercise 8	

‡ You must register your student ID with i-Clicker; this should be done by week # 3 at the latest.

* Adjustments to the number of lab exercises and their dates are possible.

** Adjustments to the number of assignments and their due dates are possible.

Please note: In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.