Programs & Courses

bcit.ca/study/outlines/20142055053

COMP 1409 - Introduction to Software Development 1

School:	School of Computing and Academic Studies
Program:	Computing Part-time Studies
Course Credits:	3
Start Date:	April 08, 2014
End Date:	June 24, 2014
Total Hours:	36
Total Weeks:	12
Hours/Weeks:	3
Delivery Type:	Lecture/Lab
CRN:	55053

Instructor Details

Name: Colleen Penrowley
Email: Instructor to provide
Office Hours: Instructor to provide

Course description

This hands-on course is designed for those with no previous programming experience and is also appropriate for experienced developers who want to learn modern object-oriented (OO) languages such as Java and C#. Using an "objects first" approach, students receive an intensive introduction to object-oriented programming. Topics include classes and objects and their relationship, primitive data types, constructors, methods, repetition and selection, collections, abstraction and modularization. Upon successful completion, participants will have a basic understanding of programming concepts and objects, and be prepared to move on to higher level OO programming language courses. Prerequisite: COMP 1002 or equivalent knowledge.

Course goals

- To provide an understanding of object-oriented programming concepts.
- To prepare students for follow-on courses in software development.

Course learning outcomes / competencies

Upon successful completion of this course, the student will be able to:

- Explain object-oriented programming concepts including: object, class, method, encapsulation.
- Explain abstraction and modularization in programming.
- Describe data types used in programming.
- Explain the use of variables and constants.
- Identify and use control structures.
- Use correct syntax and documentation standards.
- Read class library interfaces.
- Write simple programs.
- Test and debug simple programs.

Evaluation criteria

Criteria	%	Comments
In-class labs	4	
Take-home labs	8	
Quizzes	24	There is a quiz at the beginning of every session except the first and the last.
Assignments	44	There are three take-home assignments.
Exam	20	To pass the course you must maintain an average of at least 50% in each component of the course, and must score at least 50% on the final exam.

NOTE: Passing grade for this course is 60%.

Late assignments will not be accepted for marking unless the student makes arrangements with the instructor before the assignment is due. Assignments must be done on an individual basis unless otherwise specified by the instructor.

There are three take-home assignments worth a total of 44%. The take-home assignments will be downloaded and submitted through the course Learning Management System.

Students are encouraged to work in groups to develop peer to peer communication and support. However, **each student must hand in their own individual work** (not copies of the same assignment). Plagiarism and other forms of cheating will not be tolerated.

Assignments are to be completed by each student on an individual basis unless stated otherwise. Any form of **plagiarism will result in a grade of ZERO** for the first instance. Any subsequent instances of Academic Misconduct will meet with harsher penalties. These penalties may include failing the course and/or removal from the program.

Attendance requirements

Computing PTS Attendance Policy

Attendance in lectures and labs is mandatory and recorded for all lessons in this course.

- In case of illness or other unavoidable cause of absence, the PTS student must communicate as soon as possible with his/her Instructor indicating the reason for the absence.

- Prolonged illness which causes the PTS student to miss 20% or more of the lessons will require a BCIT -approved medical certificate submitted to the department, substantiating the reason for the absence.

Excessive absence of 20% or more may result in failure or forced withdrawal from this course.

Learning resources

Textbook Required:

David J. Barnes & Michael Kölling

Objects First with Java
A Practical Introduction using BlueJ

Prentice Hall / Pearson Education, 2008
ISBN-10: 0-13-606086-2
ISBN-13: 978-0-13-606086-4

Java Platform (JDK) from Sun Microsystems, downloaded from
http://www.oracle.com/technetwork/java/javase/downloads/index.html

BlueJ interactive development environment, downloaded from www.bluej.org

Other information

Computer Use Guidelines

BCIT Computing students are expected to use BCIT resources in both a professional and ethical manner. When using BCIT computer resources, some specific expectations include:

- Respect others. Do not download, view, or distribute inappropriate or offensive material.
- Respect copyright. Do not download or share any unauthorized materials (e.g. music, movies, games and software).
- Respect our vendor software agreements. Do not download products which are not used in your specific courses (we have tracking mechanisms in place). It is each student's responsibility to remove vendor provided software when the course ends.
- Respect confidentiality. Do not attempt to gain unauthorized access to any account, system, or data. Do not attempt to bypass any protective mechanism or attempt unauthorized access or alteration of BCIT data.
- Respect availability. Do not engage in any denial of service activity or take actions that will degrade the use of BCIT or other resources. Only use BCIT resources for your BCIT course work.

Please read BCIT policies **3501 Acceptable Use of Information Technology**[1] and **3502 Information Security**[2].

Consequences of policy violation could result in loss of access to BCIT resources and / or removal from classes.

Course specific requirements

- Access to a computer capable of running the Java Platform.
- An understanding of file management on a Windows PC.

Course schedule and assignments

See Course topics.

Course topics

Session	Material Covered	Reference / Reading	Assignment	Due Date
1	Introduction to object-oriented programming concepts. Objects and classes: creating objects, data types, default values, object state.	Chapter 1, Appendix A, B.		
2	Quiz #1 Class definitions: fields, constructors, default constructor, parameters, assignment operator. Accessor methods. Javadoc comments. Programming style.	Chapter 2. 2.1 – 2.6 Appendix I Appendix J	Assignment 1	Before session 5.
3	Quiz #2 Mutator methods. Relational operators. Decisions: if statement for data validation. Displaying output. String concatenation.	Chapter 2. 2.7 – 2.11		
4	Quiz #3 Boolean operators. Local variables. Scope and lifetime of variables. Symbolic constants. Static variables and methods	Chapter 2 2.12 – 2.18 Appendix C .		
5	Quiz #4 Arithmetic operators. Calling methods. Return values. Passing parameters. Overloading constructors and methods. BlueJ Code Pad.	Chapter 2. 2.18 – 2.23	Assignment 2	Before session 8.

6	Quiz #5 Abstraction & modularization. Working with objects. External method calls.	Chapter 3. 3.1 – 3.8 .		
7	Quiz #6 Primitive types vs. object types. Objects creating objects. 'This' keyword. Using a debugger.	Chapter 3. 3.9 – 3.15 Appendix F		
8	Quiz #7 Importing library classes. Grouping objects: flexible-size collections. For-each loop. Processing a whole collection. Selective processing	Chapter 4. 4.1 – 4.9	Assignment 3	Before session 12
9	Quiz #8 Indefinite iteration. While loop with index to process a collection. While loop as a general loop. Roles of variables.	Chapter 4. 4.10		
10	Quiz #9 Identity vs. equality. Java Iterator. Anonymous objects. Chaining method calls.	Chapter 4. 4.11 - 4.15		
11	Quiz #10 Fixed-size collections. For loop. Nested loops.	Chapter 4. 4.16 – 4.17		
12	Final Exam			

BCIT policy

The following statements are in accordance with the BCIT Policies 5101, 5102, 5104, and 7507, and their accompanying procedures. To review these policies and procedures please click on the links below.

Attendance/Illness:
In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with his/her instructor or Program Head or Chief Instructor, indicating the reason for the absence. Prolonged illness of three or more consecutive days must have a BCIT medical certificate sent to the department. Excessive absence may result in failure or immediate withdrawal from the course or program. Please see **Policy 5101 - Student Regulations, and accompanying procedures** [3]

Academic Integrity:
Violation of academic integrity, including plagiarism, dishonesty in assignments, examinations, or other academic performances are prohibited and will be handled in accordance with **Policy 5104 -**

Academic Integrity and Appeals, and accompanying procedures.[4]

Accommodation:
Any student who may require accommodation from BCIT because of a physical or mental disability should refer to BCIT's Policy on Accommodation for Students with Disabilities (Policy #4501), and contact BCIT's Disability Resource Centre (SW1 2360, 604-451-6963) at the earliest possible time. Requests for accommodation must be made to the Disability Resource Centre, and should not be made to a course instructor or Program area.

Any student who needs special assistance in the event of a medical emergency or building evacuation (either because of a disability or for any other reason) should promptly inform their course instructor(s) and the Disability Resource Centre of their personal circumstances.

Human Rights, Harassment and Discrimination:
The BCIT community is made up of individuals from every ability, background, experience and identity, each contributing uniquely to the richness and diversity of the BCIT community as a whole. In recognition of this, and the intrinsic value of our diversity, BCIT seeks to foster a climate of collaboration, understanding and mutual respect between all members of the community and ensure an inclusive accessible working and learning environment where everyone can succeed.Campus Mediation Services is a supportive resource for both students and employees of BCIT, to foster a respectful learning and working environment. Any student who feels that they are experiencing discrimination or harassment (personal or human rights-related) can confidentially access this resource for advice and support. Please see **Policy 7507 – Harassment and Discrimination and accompanying procedure.**[5]

Students should make themselves aware of additional Education, Administration, Safety and other BCIT policies listed at **http://www.bcit.ca/about/administration/policies.shtml**[6]

Policy for School of Computing and Academic Studies

Attempts:Students must successfully complete a course within a maximum of three (3) attempts at the course. Students with two attempts in a single course will be allowed to repeat the course only upon special written permission from the Associate Dean. Students who have not successfully completed a course within three attempts will not be eligible to graduate from their respective program.

Approved

I verify that the content of this course outline is current.
Colleen Penrowley, Instructor
March 19, 2014

I verify that this course outline has been reviewed.
Kevin Cudihee, Program Head
April 07, 2014

I verify that this course outline has been reviewed and complies with BCIT policy.
Dean Hildebrand, Associate Dean, Science and Technology
April 08, 2014

Note: Should changes be required to the content of this course outline, students will be given reasonable notice.

Links

1. bcit.ca/files/pdf/policies/3501.pdf

2. bcit.ca/files/pdf/policies/3502.pdf
3. bcit.ca/files/pdf/policies/5101.pdf
4. bcit.ca/files/pdf/policies/5104.pdf
5. bcit.ca/files/pdf/policies/7507.pdf
6. bcit.ca/about/administration/policies
