

# Carleton University

## Department of Systems and Computer Engineering

*ECOR 1606 B & D*

*Problem Solving & Computers*

*Winter 2012*

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### Course Outline

#### Instructor:

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#### Course Objective:

The course is intended to leave students capable of using a computer to solve simple problems.

#### Instructional Resources:

- Web Site: <http://www.sce.carleton.ca/courses/ecor-1606/w12bd>
- Required Textbook: *Problem Solving with Computers*, Bryant and Marshall. This is published by the student IEEE society and will be available for purchase from the IEEE office (ME4238).
- Further Reading: There are a large number of introductory C++ programming texts available. Some are better than others but in general any such text will serve the student who wants a "second opinion". One good possibility is *Engineering Problem Solving with C++* by Delores M. Etter and Jeanine A. Ingber (Pearson Prentice-Hall).
- Consulting Service: TA's will offer a consulting service. The hours and location will be posted on the website once they are determined.

#### Examinations:

There will be three laboratory exams (an early feedback exam, a lab midterm, and a lab final) and two written tests (a midterm and a final). In the laboratory tests students will use computers. In the written tests students will answer questions on paper. The midterm will be held during class time on Wednesday February 15th. The final will be held during the University's examination period. It is for evaluation purposes only and will not be returned to students. The laboratory exams will take place on the dates indicated on the lab schedule. All exams will be closed book. Students will, however, be supplied with standard reference sheets.

Students who miss an exam will receive a mark of zero unless they have a legitimate reason for being absent and provide appropriate documentation dated within one day of the exam and presented to their instructor within five working days. In this case the weight of the missed exam will normally be transferred to the following exam of the same type (e.g. the weight of the written midterm will be transferred to the written final). Special arrangements will apply in the case of the lab final. Students who miss the lab final and provide appropriate documentation will be permitted to write a make-up lab final. Those who miss the make-up lab final will be given a final grade of ABS.

#### Assignments:

Six bi-weekly assignments will be posted on the web site as the course progresses. As each student's worst assignment mark will be discarded, you can miss an assignment and still earn the maximum possible assignment mark. Please do not ask for exemptions and/or extensions because of illness and so on - you have, in effect, a "sick day" to play with, and it is up to you to use it wisely. Assignment deadlines and details of the grading process will be posted on the web site.

Assignment marks are conditional upon students being able to explain their work if asked to do so. **Students who are strangely unfamiliar with what is supposedly their own work will have their marks adjusted accordingly.** Plagiarism (copying and handing in for credit someone else's work) is a serious instructional offense that will not be tolerated. Please refer to the section on instructional offenses in the Undergraduate Calendar for additional information.

Do not conclude that, because the assignments are "only" worth 5% of your final mark, they are not worth doing. Doing the assignments is the best way of acquiring the skills that you need to pass this course.

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#### Health and Safety:

Every student should have a copy of our Health and Safety Manual. An electronic version of the manual can be found at <http://www.sce.carleton.ca/courses/health-and-safety.pdf>

#### Lab Schedule:

Labs start on Monday, January 9<sup>th</sup>, and run until Friday, March 30<sup>th</sup>. There are 11 labs in total. Labs #3, #7 and #11 are lab tests.

Lab	Topic	Starts	Ends
1	Tutorial (selection and iteration)	Jan 9	Jan 13
2	Tutorial (using C--)	Jan 16	Jan 20
3	Early Feedback Test	Jan 23	Jan 27
4	Remedial Tutorial	Jan 30	Feb 3
5	Tutorial (The Dev C++ Environment)	Feb 6	Feb 10
6	Tutorial	Feb 13	Feb 17
7	Lab Midterm	Feb 27	Mar 2
8	Remedial Tutorial	Mar 5	Mar 9
9	Tutorial	Mar 12	Mar 16
10	Tutorial	Mar 19	Mar 23
11	Lab Final	Mar 26	Mar 30

#### Week-by-Week Outline:

This outline is intended only a general guide to what will be covered and is subject to change.

Week	Lecture Dates	Material	Text
1	Jan 4	Introduction to course, selection and iteration	Ch 1
2	Jan 9, 11	Selection and iteration, Programming in C--	Ch 1 (cont); Ch 2
3	Jan 16, 18	Programming in C--	Ch 2
4	Jan 23, 25	Selection and iteration in computer programs.	Ch 3
5	Jan 30, Feb 1	More examples, multi-way if, do while	Ch 3 (cont)
6	Feb 6, 8	Moving from C-- to C++ (int variables, etc.)	Ch 4
7	Feb 13, 15	Breaks, for loops, midterm exam	Ch 5
8	Feb 27, 29	Output formatting	Ch 5 (cont)
9	Mar 5, 7	Functions	Ch 6
10	Mar 12, 14	Functions, Arrays	Ch 6 (cont); Ch 7
11	Mar 19, 21	More arrays	Ch 7 (cont)
12	Mar 26, 28	Arrays, Input/output (input errors, reading from files)	Ch 7 (cont); Ch 8
13	Apr 2, 4	Input/output (input errors, reading from files), review	Ch 8 (cont)

#### Grading Scheme:

Lab Exams: 45% (Early Feedback Exam 5%, Lab Midterm 10%, Lab Final 30%)

Written Exams: 50% (Midterm 10%, Final 40%)

Assignments: 5%

#### Students with Disabilities:

Students with disabilities requiring academic accommodations in this course must register with the Paul Menton Centre for Students with Disabilities for a formal evaluation of disability-related needs. Registered PMC students are required to contact the Centre, 613-520-6608, every term to ensure that their instructor receives their Letter of Accommodation, no later than two weeks before the first in-class test/midterm requiring accommodations. If you require accommodation for your formally scheduled exam(s) in this course, please submit your request for accommodation to PMC by March 7<sup>th</sup>, 2012.