Carleton University
Department of Systems and Computer Engineering
SYSC 2004 - Object-Oriented Software Development - Winter 2009
Course Outline

Instructor

D.L. Bailey, Room 3042 MC, 520-2600 ext. 5748, bailey@sce.carleton.ca.
Office hours: posted on the course Web site.

Section B Lectures: Monday and Wednesday, 8:35 – 9:55.
Section C Lectures: Wednesday and Friday, 16:05 – 17:25.

Course Objectives

- To learn the fundamental concepts of object-oriented programming.
- To gain expertise applying these concepts by developing small-scale programs as communities of interacting (collaborating) objects.
- To learn and apply some lightweight, modern techniques commonly used in object-oriented software development (responsibility-driven design; refactoring; iterative, incremental development; test-driven development) .
- To develop the ability to build software experiments as an aid to learning.

Prerequisite

SYSC 2002 is the prerequisite for SYSC 2004. Prerequisite waivers will not be granted. Students who have not received credit for SYSC 2002 must withdraw from SYSC 2004 by the last date for registration in Winter term courses; otherwise, they will be deregistered before the end of term. Students who received DEF in the Fall 2008 session of SYSC 2002 are eligible to register in SYSC 2004, provided that they write the deferred exam in February 2009. These students can remain in SYSC 2004 if the DEF is changed to a passing grade; otherwise, they must withdraw from SYSC 2004 by the last day for withdrawal from Winter term courses.

Textbooks

Think Python: An Introduction to Software Design, Allen Downey, Green Tea Press, 2008. A free copy of this book can be downloaded from the course Web site.

Java for Python Programmers, Bradley N. Miller, 2008. A free copy of this ebook can be downloaded from the course Web site.

Reference

Objects First with Java: A Practical Introduction Using BlueJ, Fourth Edition, David J. Barnes and Michael Kolling, Pearson Education Limited/Prentice Hall, 2009.

Web Site

The URL for the Web site is `http://sites.google.com/site/baileysysccourses`. Instructions describing how to join the site will be distributed in class.

Attendance

Students are expected to attend all lectures and lab periods. The Faculty of Engineering and Design requires its students to have a conflict-free timetable, so requests to accommodate missed lab periods, tests, etc., because of conflicts with other courses, jobs or vacation plans will not be considered.

Evaluation and Grading Scheme

Students will be evaluated by means of pop quizzes, laboratory work, assignments, two tests and a final exam.

To pass the course, students must pass the final examination (50% or better). For these students, the final grade will be calculated by weighting the course components as follows:

Lab work:	5%
Tests:	30% (15% each)
Final exam:	65%

If this calculation yields a value less than 60%, this value will be converted to your final letter grade, which will be between D+ and F.

If you receive at least 60% under this scheme your grade will be recalculated using the following component weights. The higher of the two values will be converted to your final letter grade, which will be between A+ and C-.

Assignments:	5%
Lab work:	10%
Tests:	25% (12.5% each)
Final exam:	60%

In other words, your assignments count towards your final grade (and the weight of your lab component is increased to 10%) only if the 5%/30%/65% weighted sum of your lab work, test and final exam components is 60% or better.

Pop Quizzes

Short pop quizzes will be held during some of the lectures. These quizzes are for diagnostic purposes only: solutions will be posted on the Web site or presented in class to provide you with feedback on your understanding of the course material; however, the quizzes will not contribute to your final grade.

Lab Periods

Attendance at the scheduled laboratory periods is mandatory: students must attend the lab in which they are registered, and attendance will be taken. During the labs you will work on short programming exercises. Some exercises will be "stand-alone" and will be designed to help you understand particular concepts that have been introduced in the lectures. Other exercises will be related to the current assignment. You will normally be required to demonstrate or submit your lab work by the end of the lab period.

Lab exercises will be graded *satisfactory* (1/1) or *unsatisfactory* (0/1). *Satisfactory* means that you were present at the lab and made reasonable progress towards completing the lab exercise. (Note that you do not have to finish all of the exercise to receive 1/1.) *Unsatisfactory* means that you were absent from the lab period or you attended but did not make enough progress on the exercise or did not demo or submit your work. Your lowest two lab marks will not be counted when calculating your final grade. This means you can have up to two *unsatisfactory* lab exercises and still earn full marks (100%) for the lab component of the course.

If you are absent from a lab period for any reason, you will receive 0/1 for that lab. If you are unable to attend a lab because of illness, you are not required to provide a medical certificate to explain your absence. It is up to you to do the missed lab work on your own time; however, you cannot submit your completed lab work late to receive credit for the missed lab. You can miss up to two of the lab periods and still receive full credit for the labs, but it's up to you to use your "excused absences" wisely. Serious long-term illness will be dealt with on an individual basis; in these circumstances, please contact your instructor to discuss appropriate arrangements.

Students can use the Systems and Computer Engineering undergraduate computer labs whenever the Mackenzie Building and Minto CASE are open, except for those times when labs are reserved for specific courses.

Assignments

Programming assignments will be posted on the course Web site. Portions of the design and code from any assignment may be reused and refined in subsequent assignments, and doing the assignments is the best way to learn the course material and prepare for the exams, so students are encouraged not to "write off" any particular assignment just because of its relatively low weight in the overall grading scheme.

Your lowest assignment mark will not be counted when calculating your final grade. This means you can miss an assignment and still earn full marks (100%) for the assignment component of the course. Late assignments will not normally be accepted. Please do not ask for exemptions and/or extensions because of illness and so on - you have, in effect, one "sick day" to play with, and it is up to you to use it wisely. Serious long-term illness will be dealt with on an individual basis; in these circumstances, please contact your instructor to discuss appropriate arrangements.

Exams

There will be two closed-book tests.. The first will be held approximately one-half of the way through the term. The second will be held approximately two-thirds of the way through the term. The dates of the tests will be announced in class and posted on the course Web site. Each test will cover all of the course material up to and including the previous week's lab and the most recent assignment.

Students who are unable to write a test because of illness or other circumstances beyond their control must provide in cases of illness a medical certificate dated no later than one working day after the exam, or appropriate documents in other cases. Medical documents must specify the date of the onset of the illness, the (expected) date of recovery, and the extent to which the student was/is incapacitated during the time of the test.

For students who miss the first test, or who write the first test but miss the second test: if this information is provided to the instructor no later than five working days after the test, the student will be permitted to write a deferred test; otherwise, the mark for the missed test will be 0. The deferred test will be held at the end of the term, and will cover all of the course material up to that date. Students who miss the deferred test, for any reason, will receive a mark of 0 for the test. The weight of the final exam will not be increased to replace a missed deferred test.

Students who miss two tests, for any reason, will normally receive 0 for the second missed test. The deferred test enables students to "make-up" one missed test, but it cannot be used to replace multiple missed tests. The weight of the final exam will not be increased to replace multiple missed tests. It is important that all students receive feedback by writing tests throughout the term, and that final grades for all students be based on term tests as well as a final exam.

Requests for accommodation because of poor performance on a test will not be considered. We will not replace a poor test mark by increasing the weight of the final exam.

A closed-book final exam will be held during the University's April examination period. The *Academic Regulations of the University* permit instructors to specify requirements that must be satisfied for students to be eligible to write the final examination or, where circumstances warrant, apply to the Registrar's Office for deferral of the final examination.

- All students are eligible to write the final examination, regardless of the marks they received during the term.
- Students who miss the final exam but wrote two tests (including, if appropriate, the deferred test) will receive the grade ABS. These students are eligible to apply for deferral of the final examination. For more information, see the current Undergraduate Calendar, *Academic Regulations of the University*, Section 2.2, The Course Outline; Section 2.3, Standing in Courses/Grading System; and Section 2.5, Deferred Final Examinations.
- Students who miss the final exam and wrote fewer than two tests will receive the grade FND. These

students are ineligible to write the deferred final exam.

The final examination is for evaluation purposes only and will not be returned to students. You will be able to make arrangements with your instructor to see your marked final examination before June 30, 2009 (the last day for receipt of applications for review of final grades in Winter-term courses). Your exam will not be remarked during this meeting and solutions to the exam questions will not be provided.

Early Feedback

See Section 2.2.1 of the *Academic Regulations of the University.*

The weekly labs provide an opportunity to receive informal feedback and suggestions for improving your code. Outside of the scheduled labs, you can obtain feedback during office hours or by making an appointment to see your instructor.

If possible, at least one assignment will be evaluated prior to the 25th teaching day of the term. The first test exam will be marked and returned prior to the 40th teaching day of the term.

Academic Accommodation for Students with Disabilities

Students with disabilities who require academic accommodations in this course are encouraged to contact a coordinator at the Paul Menton Centre for Students with Disabilities (PMC) to complete the necessary forms. After registering with the PMC, make an appointment to meet with your instructor to discuss your needs **at least two weeks before the first test**. This will allow for sufficient time to make the required arrangements. Please note that the deadline for submitting completed forms to the PMC for accommodations for formally scheduled final exams is March 6, 2009.

Academic Accommodation for Religious Obligations

Students who require accommodations due to religious obligations must follow the procedures described in Section 2.10 of the *Academic Regulations of the University.*

List of Topics/Week-by-week Outline

See the course Web site.