

Faculty of Engineering, Architecture and Science Department of Electrical and Computer Engineering

Course Outline

COE318: Software Systems

Prerequisites	CHY 102, MTH 140, MTH 141, PCS 125, PCS 211, CPS 125, ELE 202, MTH 240			
Website	www.ee.ryerson.ca/~courses/coe318/			
	All course related information, announcements and material such as lab documents are available at the course website. It is student's responsibility to check this website regularly.			
Compulsory Texts:	1. <i>Head First Java</i> , By Kathy Sierra and Bert Bates, Second Edition, February 2005, ISBN: 0-596-00920-8, 720 pages.			
Reference Text	 Java Software Solutions (Foundation of Program Design), 4th Edition, June 2004. Object-Oriented System Development, by Dennis de Champeaux, Douglas Lea, and Penelope Faure published by Addison Wesley. Objects first with Java, a practical introduction using BlueJ, by David J. Barnes & Michael Kölling published by Prentice Hall/ Pearson Education, 2004. 			
Calendar Description	The course introduces the software development cycle including requirements analysis and specifications, implementation, and testing, inspection and debugging techniques. An object-oriented programming language is used. Decomposition in to classes and modules is examined. The integration of independent modules is explored. <i>Course Weight: 1.00 Billing Units: 1</i>			
Learning Objectives	 At the end of this course, the successful student will be able to: Uses technical knowledge, design methodology, and appropriate design tools and related resources (4a) Produces a design strategy and uses it to guide a design (4c) Integrates generated ideas into design plan, generates ideas creatively (4d) Understand the concept of OOP as well as the purpose and usage principles of inheritance, polymorphism, encapsulation and method overloading. Create Java application programs using sound OOP practices, e.g., interfaces and APIs and proper program structuring, e.g., by using access control identifies, error exception handling. 			
	Note: Numbers in parentheses refer to the graduate attributes required by the Canadian Engineering Accreditation Board. For more information, see: <u>http://www.feas.ryerson.ca/quality_assurance/accreditation.pdf</u>			
Course Organization	3 hours of lecture per week for 13 weeks2 hours of lab per week for 12 weeks			

Course Evaluation

Midterm exam	20%
Lab reports	30%
Quiz	5%
Final exam	45%
Total	100%

- **IMPORTANT:** Students must achieve passing grades in both the theoretical and the laboratory components of the course in order to pass the course.
- All the Labs have to be done individually.
- Lab assignments should be submitted 24 hours before the beginning of next lab. Late lab assignments will not be accepted and will receive a mark of 0.
- Two week labs carry double weight than one week labs.

ExaminationsMidterm exam in Week 7, 1 hour, multiple-choice and questions, closed book (covers
Weeks 1-6).
Final exam, during exam period, three hours, closed-book (covers Weeks 1-13).

Course Content

NOTE: This is a preliminary schedule and is subject to change and modifications.

In the table below, chapter numbers are from the "Head First Java" book.

Chap.	Sections	hours	Topic, description
http://java.sun.com/docs/	n/a	3	Software Development Cycle. Object-
books/tutorial/java/concepts/index.htm			Oriented Programming Paradigm.
1, 2	n/a	3	Programming Languages.
			Classes and Objects.
3	n/a	3	Variables
4, 10	n/a	3	Using Classes and Objects
5	n/a	3	Writing Classes
6	n/a	3	Implementation of Classes
	n/a	3	Object-Oriented Design
	n/a	3	Testing technique using JUnit
7, 9	n/a	3	Inheritance
8	n/a	6	Polymorphism
11	n/a	6	Exception

Laboratory/Tutorials

Week	Title	Room
2	Introduction - compile and run (Java or C) source code.	
3	Immutable objects - create a project with more than one class.	
4	Linking of objects	
5	Arrays and Loops	
6, 7	Use Array List - perform user input/output.	
8,9	Write classes - Test using JUnit, Debug in Netbeans.	
10, 11	Understand more complex application such as a digital circuit simulator,	
	Use interfaces, singleton design pattern.	
12, 13	Design and develop a complex application	

Important Notes

- 1. Should a student miss a mid-term test or equivalent (e.g. studio or presentation), with appropriate documentation, a make-up will be scheduled as soon as possible in the same semester. Make-ups should cover the same material as the original assessment but need not be of an identical format. Only if it is not possible to schedule such a make-up may the weight of the missed work be placed on the final exam, or another single assessment. This may not cause that exam or assessment to be worth more than 70% of the student's final grade. If a student misses a scheduled make-up test or exam, the grade may be distributed over other course assessments even if that makes the grade on the final exam worth more than 70% of the final grade in the course.
- 2. Students who miss a final exam for a verifiable reason and who cannot be given a make-up exam prior to the submission of final course grades, must be given a grade of INC (as outlined in the *Grading Promotion and Academic Standing Policy*) and a make-up exam (normally within 2 weeks of the beginning of the next semester) that carries the same weight and measures the same knowledge, must be scheduled.
- 3. Medical or Compassionate documents for the missing of an exam must be submitted within 3 working days of the exam. Students are responsible for notifying the instructor that they will be missing an exam as soon as possible.
- 4. Requests for accommodation of specific religious or spiritual observance must be presented to the instructor no later than two weeks prior to the conflict in question (in the case of final examinations within two weeks of the release of the examination schedule). In extenuating circumstances this deadline may be extended. If the dates are not known well in advance because they are linked to other conditions, requests should be submitted as soon as possible in advance of the required observance. Given that timely requests will prevent difficulties with arranging constructive accommodations, students are strongly encouraged to notify the instructor of an observance accommodation issue within the first two weeks of classes.
- 5. The results of the first test of mid-term test will be returned to students before the dead line to drop an undergraduate course in good Academic Standing.
- 6. Students are required to adhere to all relevant University policies including the Student Code of Academic Conduct (<u>www.ryerson.ca/senate/policies/pol60.pdf</u>) and Non-Academic Conduct (<u>www.ryerson.ca/senate/policies/pol61.pdf</u>)
- 7. Students are required to obtain and maintain a Ryerson Matrix e-mail account for timely communications between the instructor and the students.
- 8. Any changes in the course outline, test dates, marking or evaluation will be discussed in class prior to being implemented.