RYERSON UNIVERSITY

Faculty of Engineering, Architecture and Science

Department of Electrical and Computer Engineering

Course Outline (F2014)

COE318: Software Systems

COE318 Instructors

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Prerequisites for COE318	CHY 102, MTH 140, MTH 141, PCS 125, PCS 211, CPS 125, ELE 202, and 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. *Head First Java*, 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	The course introduces the software development cycle including requirements analysis and

Description	specifications, implementation, and testing, inspection and debugging techniques. An object-oriented programming language is used. Decomposition into classes and modules is examined. The integration of independent modules is explored.
Learning Objectives	At the end of this course, the successful student will be able to: 1. Uses technical knowledge, design methodology, and appropriate design tools and related resources (4a) 2. Produces a design strategy and uses it to guide a design (4c) 3. Integrates generated ideas into design plan, generates ideas creatively (4d) 4. Understand the concept of OOP as well as the purpose and usage principles of inheritance, polymorphism, encapsulation and method overloading. 5. 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: http://www.feas.ryerson.ca/quality_assurance/accreditation.pdf
Course Organization	3 hours of lecture per week for 13 weeks 2 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.
Examinations	Quiz in Week 4, multiple-choice and questions, closed book (covers weeks 1-3). The marks will be returned approximately within two weeks after the quiz. Midterm exam in Week 7, 1 hour, multiple-choice and questions, closed book (covers weeks 1-6). The marks will be returned approximately within two weeks after the midterm. 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/ books/tutorial/java/concepts/index.htm	n/a	3	Software Development Cycle. Object-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	Design and develop a complex application. Use interfaces.	

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. 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.
4. Students are required to adhere to all relevant University policies including the Student Code of Academic Conduct (www.ryerson.ca/senate/policies/pol60.pdf) and Non-Academic Conduct (www.ryerson.ca/senate/policies/pol61.pdf)
5. Students are required to obtain and maintain a Ryerson Matrix e-mail account for timely communications between the instructor and the students.
6. Any changes in the course outline, test dates, marking or evaluation will be discussed in class prior to being implemented.

Missed Classes and/or Evaluations

Students are required to inform their instructors of any situation which arises during the semester which may have an adverse effect upon their academic performance, and must request any considerations and accommodations according to the relevant policies and well in advance. Failure to do so will jeopardize any academic appeals.

- *Medical certificates* – If a student misses the deadline for submitting an assignment, or the date of an exam or other evaluation component because of illness, he or she must submit a Ryerson Student Medical Certificate AND an Academic Consideration form within 3 working days of the missed date. Both documents are available at www.ryerson.ca/senate/forms/medical.pdf. If you are a full-time or part-time degree student, then you submit your forms to your own program department or school.
- *Religious observance* – If a student needs accommodation because of religious observance, he or she must submit a Request for Accommodation of Student Religious, Aboriginal and Spiritual Observance AND an Academic Consideration form within the first 2 weeks of the class or, for a final examination, within 2 weeks of the posting of the examination schedule. If the required absence occurs within the first 2 weeks of classes, or the dates are not known well in advance as they are linked to other conditions, these forms should be submitted with as much lead time as possible in advance of the required absence. Both documents are available at http://www.ryerson.ca/senate/forms/relobservforminstr.pdf. If you are a full-time or part-time degree student, then you submit the forms to your own program department or school.
- *Students with disabilities* – In order to facilitate the academic success and access of students with disabilities, they should register with the Access Centre http://www.ryerson.ca/studentservices/accesscentre/index.html. Before the first graded work is due, students should also inform their instructor through an "Accommodation Form for Professors" that they are registered with the Access Centre and what accommodations are required.

Academic Integrity and Plagiarism

Ryerson's Policy 60 (the *Student Code of Academic Conduct)* applies to all students at the University. The policy and its procedures are triggered in the event that the there is a suspicion that a student has engaged in a form of academic misconduct.

Forms of academic misconduct include plagiarism, cheating, supplying false information to the University, and other acts. The most common form of academic misconduct is plagiarism. Plagiarism is a serious academic offence and penalties can be severe. In any academic exercise, plagiarism occurs when one offers as one's own work the words, data, ideas, arguments, calculations, designs or productions of another without appropriate attribution or when one allows one's work to be copied.

It is assumed that all examinations and work submitted for evaluation and course credit will be the product of individual effort, except in the case of group projects arranged for and approved by the course instructor. Submitting the same work to more than one course, without instructor approval, is also considered a form of plagiarism.

Students are advised that suspicions of academic misconduct may be referred to the Academic Integrity Office (AIO). Students who are charged with academic misconduct will have a Disciplinary Notation (DN) placed on their academic record (not on their transcript) and will be assigned one or more of the following penalties:

- A grade reduction for the plagiarized work
- A zero for the plagiarized work
- An F in the course
- More serious penalties up to and including expulsion from the University

For more detailed information on these issues, please refer to the full online text for the *Student Code of Academic Conduct* at http://www.ryerson.ca/senate/policies/pol60-F2014.pdf and the Academic Integrity Website at www.ryerson.ca/ai.

Important Resources Available at Ryerson

Use the services of the University when you are having problems writing, editing or researching papers, or when you need help with course material:

- **The Library** (LIB 2nd floor) provides research workshops and individual assistance. Inquire at the Reference Desk or at www.ryerson.ca/library/info/workshops.html
- **The Writing Centre** (LIB 272- B) offers one-on-one tutorial help with writing and workshops www.ryerson.ca/writingcentre/workshops.htm
- **Learning Success** (VIC B-15) offers individual sessions and workshops covering various aspects of researching, writing, and studying. You must book these directly through their website http://www.ryerson.ca/studentservices/learningsuccess/
- **English Language Support** (VIC B-17) offers workshops to improve overall communication skills www.ryerson.ca/studentservices/els/

There is one general site where you may see and register for all of the workshops offered by all of these areas: http://www.ryerson.ca/academicintegrity/workshops.html