EECS 2011Z Winter 2017-18 Fundamentals of Data Structures
CB121 Tues Thurs 13:00 – 14:30

Instructor Information:
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Course Website: www.eecs.yorku.ca/course/2011

General Description:
This course introduces the key data structures underlying widely-used algorithms. Emphasis is placed upon expression of these data structures as abstract data types (ADTs), and their implementation in an object-oriented context. (See the schedule on Page 3 for the list of topics to be covered.)

Outcomes:
By the end of the course, students will be familiar with the more prevalent data structure patterns, and will be able to design and implement variations on these patterns to solve a broad range of real-world problems.

Required Text:
- Goodrich, M.T., Tamassia R. & Goldwasser M.H. (2014). *Data Structures and Algorithms in Java (6th ed.)* John Wiley & Sons.
  - Amazon.ca: $156.24 ($51.20 on Kindle)
  - Chapters.indigo.ca: $157.82
  - York Bookstore: $174.95

Drop Date: Mar 9, 2018

Summary of Requirements:

Component	Weight
Assignments	20%
Midterm test (closed book)	30%
Final exam (closed book)	50%

Assignments:
All assignments are individual work. We use MOSS to detect software plagiarism. Any evidence of copying will be considered a breach of academic honesty and will be dealt with accordingly (see www.cse.yorku.ca/admin/coscOnAcadHonesty.html for more information).

Late assignments will **not** be accepted. There are no exceptions.

Last updated: December 26, 2017

Assignment	Weight	Due Date
1	5%	Thurs Jan 25 11:59pm
2	5%	Tues Feb 20 11:59pm
3	5%	Tues Mar 13 11:59pm
4	5%	Tues Apr 3 11:59pm

Policy on Missed Assignments and Tests:
There will be no make-up assignments or midterms. For students who miss an assignment or the midterm due to a medical or non-medical emergency, the final grade will be based upon the other submitted work and final exam. To qualify for this option, the student must contact **Prof. Elder** in person or by telephone or email within **48 hours** of the missed assignment or midterm. Appropriate documentation verifying the circumstances of the emergency must be provided. Failure to provide appropriate documentation will result in a grade of 0 on the missed work.

What is appropriate documentation?
a) **medical circumstances** – tests or assignments missed due to medical circumstances must be supported by an attending physician's statement or a statement by a psychologist or counselor. The physician's statement must include the following:

i) full name, mailing address, telephone number of the physician.
ii) state the nature of the illness and its duration (i.e., specific dates covered), and
iii) an indication of whether the illness and/or medication prescribed would have SERIOUSLY affected the student's ability to study and perform over the period in question.

NOTE: the physician's office may be contacted to verify that the forms were completed by the physician.

b) **non-medical circumstances** – tests or assignments missed due to non-medical circumstances must be supported by appropriate documentation, i.e., death certificates, obituary notice, automobile accident reports, airline/bus ticket/receipt for emergency travel (with date of booking on ticket), etc. Airline/train/bus ticket/receipts for emergency travel must indicate destination, departure, and return dates. Having to work is not considered a valid excuse for missing a test or assignment.

Schedule (approximate)

Date	Topic	Readings	Graded Work	Notes
Thurs Jan 4	Introduction	1-2		
Tues Jan 9	Analysis Tools	4		
Thurs Jan 11	Analysis Tools	4,6		
Tues Jan 16	Linear Data Structures	3.1-3.2,7.1-7.4		
Thurs Jan 18	The Java Collections Framework	7.5		
Tues Jan 23	The Java Collections Framework	7.5		
Thurs Jan 25	Recursion	5	Assign 1 due	
Tues Jan 30	Trees	8		
Thurs Feb 1	Priority Queues & Heaps	9.1-9.3,9.5		
Tues Feb 6	Priority Queues & Heaps	9.1-9.3, 9.5		
Thurs Feb 8	Maps, Hash Tables, Dictionaries	10	Assign 1 returned	
Tues Feb 13	Loop Invariants & Binary Search	4.43		
Thurs Feb 15	Midterm Review			
Tues Feb 20	Reading Week		Assign 2 due	
Thurs Feb 22	Reading Week			
Tues Feb 27	Midterm			
Thurs Mar 1	Loop Invariants & Binary Search	4.43		
Tues Mar 6	Search Trees	11	Assign 2 returned	
Thurs Mar 8	Search Trees	11	Midterm returned	Drop date is Mar 9
Tues Mar 13	Comparison Sorts	9.4, 12	Assign 3 due	
Thurs Mar 15	Comparison Sorts	9.4, 12		
Tues Mar 20	Linear Sorts	12.3.2		
Thurs Mar 22	Graphs – ADTs & Implementations	14.1-14.2		
Tues Mar 27	Graphs – Depth First Search	14.3.1-14.3.2, 14.5	Assign 3 returned	
Thurs Mar 29	Graphs – Breadth First Search	14.3.3		
Tues Apr 3	Final Review		Assign 4 due	

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