EECS 2011E Fall 2015-16 Fundamentals of Data Structures
SLH F Tues Thurs 17:30 – 19:00

Instructor Information:
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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: $143.55 ($52.76 on Kindle)
  - Chapters.indigo.ca: $143.55
  - York Bookstore: $170.95 ($76.90 for E-Book)

Drop Date: Nov 9, 2015

Summary of Requirements:

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

Last updated: October 12, 2015

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.

Assignment	Weight	Initial Due Date	Revised Due Date
1	5%	Thurs Oct 1 11:59pm	Tues Oct 6 11:59pm
2	5%	Tues Oct 20 11:59pm	Mon Nov 2 11:59pm
3	5%	Thurs Nov 12 11:59pm	
4	5%	Thurs Dec 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 Sept 10	Introduction	1-2		
Tues Sept 15	Analysis Tools	4		
Thurs Sept 17	Analysis Tools	4,6		
Tues Sept 22	Linear Data Structures	3.1-3.2,7.1-7.4		
Thurs Sept 24	The Java Collections Framework	7.5		
Tues Sept 29	The Java Collections Framework	7.5		
Thurs Oct 1	Recursion	5		
Tues Oct 6	Trees	8	Assign 1 due	
Thurs Oct 8	Priority Queues & Heaps	9.1-9.3,9.5		
Tues Oct 13	Priority Queues & Heaps	9.1-9.3, 9.5		
Thurs Oct 15	Maps, Hash Tables, Dictionaries	10	Assign 1 returned	
Tues Oct 20	Loop Invariants & Binary Search	4.43		
Thurs Oct 22	Midterm Review			
Tues Oct 27	Midterm			
Thurs Oct 29	Reading Day		Assign 2 due	
Tues Nov 3	Loop Invariants & Binary Search	4.43		
Thurs Nov 5	Search Trees	11	Midterm returned	
Tues Nov 10	Search Trees	11	Assign 2 returned	Drop date is Nov 9
Thurs Nov 12	Comparison Sorts	9.4, 12	Assign 3 due	
Tues Nov 17	Comparison Sorts	9.4, 12		
Thurs Nov 19	Linear Sorts	12.3.2		
Tues Nov 24	Graphs – ADTs & Implementations	14.1-14.2	Assign 3 returned	
Thurs Nov 26	Graphs – Depth First Search	14.3.1-14.3.2, 14.5		
Tues Dec 1	Graphs – Breadth First Search	14.3.3		
Thurs Dec 3	Final Review		Assign 4 due	