EECS 2011Z (W) 2015 Fundamentals of Data Structures
CLH B Tues Thurs 13:00-14:30

Instructor Information:
James H. Elder
0003G Lassonde Building
tel: (416) 736-2100 ext. 66475 fax: (416) 736-5857
email: jelder@yorku.ca website: www.yorku.ca/jelder
Office Hour: Thurs 14:30-15:30

TAs:
Alireza Moghaddam
Email: alireza@cse.yorku.ca
Office Hour: By appointment

Nada el Assal
Email: elassal_nada@yahoo.com
Office Hour: By appointment

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: $132.89 ($52.76 on Kindle)
  - Chapters.indigo.ca: $155.75
  - York Bookstore: $163.95 ($66.60 for E-Book)

Drop Date: March 6, 2015

Summary of Requirements:

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

Last updated: January 4, 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	Due
1	5%	Tues Jan 27 11:59pm
2	5%	Thurs Feb 12 11:59pm
3	5%	Thurs Mar 12 11:59pm
4	5%	Thurs Apr 2 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
Tues Jan 6	Introduction	1-2		
Thurs Jan 8	Analysis Tools	4		
Tues Jan 13	Analysis Tools	4,6		
Thurs Jan 15	Linear Data Structures	3.1-3.2,7.1-7.4		
Tues Jan 20	The Java Collections Framework	7.5		
Thurs Jan 22	The Java Collections Framework	7.5		
Tues Jan 27	Recursion	5	Assign 1 due	
Thurs Jan 29	Trees	8		
Tues Feb 3	Priority Queues & Heaps	9.1-9.3,9.5		Guest Lecture
Thurs Feb 5	Priority Queues & Heaps	9.1-9.3, 9.5	Assign 1 returned	Guest Lecture
Tues Feb 10	Maps, Hash Tables, Dictionaries	10		
Thurs Feb 12	Midterm Review		Assign 2 due	
Tues Feb 17	Reading Week			
Thurs Feb 19	Reading Week			
Tues Feb 24	Midterm		Assign 2 returned	
Thurs Feb 26	Loop Invariants & Binary Search	4.43		
Tues Mar 3	Loop Invariants & Binary Search	4.43	Midterm returned	
Thurs Mar 5	Search Trees	11		Drop date is Mar 6
Tues Mar 10	Search Trees	11		
Thurs Mar 12	Comparison Sorts	9.4, 12	Assign 3 due	
Tues Mar 17	Comparison Sorts	9.4, 12		
Thurs Mar 19	Linear Sorts	12.3.2		
Tues Mar 24	Graphs – ADTs & Implementations	14.1-14.2	Assign 3 returned	
Thurs Mar 26	Graphs – Depth First Search	14.3.1-14.3.2, 14.5		
Tues Mar 31	Graphs – Breadth First Search	14.3.3		
Thurs Apr 2	Final Review		Assign 4 due	

Last updated: January 4, 2015