

CSE 2011Z (W) 2014 Fundamentals of Data Structures
LSB 106 Tues Thurs 13:00-14:30

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. (2010). *Data Structures and Algorithms in Java (5th ed.)* John Wiley & Sons.
 - Amazon.ca: \$118.64
 - Chapters.indigo.ca: \$146.25
 - York University Bookstore: \$60 for ebook (6 month lease)

Drop Date: March 7, 2014

Summary of Requirements:

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

Final exam (closed book)	50%
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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 28 11:59pm
2	5%	Thurs Feb 13 11:59pm
3	5%	Thurs Mar 13 11:59pm
4	5%	Thurs 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
Tues Jan 7	Introduction	1-2		
Thurs Jan 9	Analysis Tools	4		
Tues Jan 14	Arrays, Array Lists & Stacks	3.1, 5.1, 6.1		
Thurs Jan 16	Queues & Linked Lists	3.2-3.3, 5.2		
Tues Jan 21	The Java Collections Framework	6.2-6.4		
Thurs Jan 23	Recursion	3.5		
Tues Jan 28	Trees	7	Assign 1 due	
Thurs Jan 30	Heaps	8.3		
Tues Feb 4	Priority Queues	8.1-8.2		Guest Lecture
Thurs Feb 6	Maps, Hash Tables, Dictionaries	9.1-9.3, 9.5	Assign 1 returned	Guest Lecture
Tues Feb 11	Search Trees	10		
Thurs Feb 13	Search Trees	10	Assign 2 due	
Tues Feb 18	Reading Week			
Thurs Feb 20	Reading Week			
Tues Feb 25	Review		Assign 2 returned	
Thurs Feb 27	Midterm		Midterm	
Tues Mar 4	Sorting	11		
Thurs Mar 6	Midterm postmortem		Midterm returned	Drop date is Mar 7
Tues Mar 11	Sorting	11		
Thurs Mar 13	Graphs	13.1-13.2	Assign 3 due	
Tues Mar 18	Graph Search	13.3		
Thurs Mar 20	Directed Graphs	13.4		
Tues Mar 25	Weighted Graphs	13.5-13.6	Assign 3 returned	
Thurs Mar 27	Strings & Dynamic Programming	12.1		
Tues Apr 1	Strings & Dynamic Programming	12.2		
Thurs Apr 3	Review		Assign 4 due	