

**CSE 2011Z (W) 2012 Fundamentals of Data Structures**  
**TEL 0001 Tues Thurs 13:00-14:30****Instructor Information:**

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Course Website: [www.cse.yorku.ca/course/2011](http://www.cse.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. (2010). *Data Structures and Algorithms in Java (5<sup>th</sup> ed.)* John Wiley & Sons. Available in the York University Bookstore.

**Drop Date:** March 9, 2012

**Summary of Requirements:**

Component	Weight
Assignments (4)	20%
Midterm test (closed book)	30%
Final exam (closed book)	50%

**Assignments:**

All assignments are individual work. We use [MOSS](http://www.cse.yorku.ca/admin/coscOnAcadHonesty.html) 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](http://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%	Thurs Jan 24 11:59pm
2	5%	Thurs Feb 9 11:59pm
3	5%	Thurs Mar 8 11:59pm
4	5%	Thurs Mar 29 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 3	Introduction	1-2		
Thurs Jan 5	Analysis Tools	4		
Tues Jan 10	Arrays, Array Lists & Stacks	3.1, 5.1, 6.1		
Thurs Jan 12	Queues & Linked Lists	3.2-3.3, 5.2		
Tues Jan 17	The Java Collections Framework	6.2-6.4		
Thurs Jan 19	Recursion	3.5		
Tues Jan 24	Trees	7	Assign 1 due	
Thurs Jan 26	Heaps	8.3		
Tues Jan 31	Priority Queues	8.1-8.2		Guest Lecture
Thurs Feb 2	Maps, Hash Tables, Dictionaries	9.1-9.3, 9.5	Assign 1 returned	Guest Lecture
Tues Feb 7	Search Trees	10		
Thurs Feb 9	Search Trees	10	Assign 2 due	
Tues Feb 14	Review			
Thurs Feb 16	Midterm		Midterm	
Tues Feb 21	Reading Week		Assign 2 returned	
Thurs Feb 23	Reading Week			
Tues Feb 28	Midterm Postmortem		Midterm returned	
Thurs Mar 1	Sorting	11		
Tues Mar 6	Sorting	11		
Thurs Mar 8	Graphs	13.1-13.2	Assign 3 due	Drop date is Mar 9
Tues Mar 13	Graph Search	13.3		
Thurs Mar 15	Directed Graphs	13.4		Guest Lecture
Tues Mar 20	Weighted Graphs	13.5-13.6	Assign 3 returned	Guest Lecture
Thurs Mar 22	Strings & Dynamic Programming	12.1		
Tues Mar 27	Strings & Dynamic Programming	12.2		
Thurs Mar 29	Review		Assign 4 due	