CS232: Data Structures

Instructor: Amber Stubbs, PhD

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Lectures: Monday, Wednesday, Friday 12:30 - 01:20PM, Library Building, L012

Lab: Monday 3:00 – 4:20 PM, Palace Road Building, P214

Office hours: Monday, 1:30-3:00PM; Friday 11AM – 12PM and 1:30-2:30; or by appointment

Class topics:

- Abstract data types and objects
  - Examples: strings, vectors, linked lists, stacks, queues, deques, sets, maps, trees, hash tables
- Applications of data structures
- Fundamental algorithms
  - Examples: searching, sorting.
- Basic methods for the design and analysis of efficient algorithms.

Textbook:

Data Structures and Algorithms in Java, 6th edition (2014).
Michael T Goodrich, Roberto Tamassia, and Michael H. Goldwasser
John Wiley and Sons, Inc.
ISBN: 978-1-118-7713-4

Grading:

- Attendance and participation: 10%
- Homework/In-class exercises: 30%
- Midterm Project: 15%
- Midterm: 15%
- Final Project: 15%
- Final: 15%

Policies:

- Attendance at all lectures is mandatory.
  - Coming to class but spending the whole session on the Internet doesn't count
- Homework will be assigned each Monday and due the following Monday before class.
  - Collaboration is encouraged but copying is cheating.
  - Homework passed in after class has started will be recorded as "late" and will receive a point deduction. Homeworks passed in after class has ended will not be accepted without prior permission
- In-class exercises will be graded pass/fail and will not be announced ahead of time.
- Tests will include take-home projects as well as in-class exams. Make-ups will not be permitted except in unusual cases and must be arranged beforehand.
- Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning and psychiatric disabilities. If you have a disability and anticipate that you will need a reasonable accommodation in this class, it is important that you contact the Director of the Academic Support Center, at 617-521-2471 early in the semester. Students with disabilities are also encouraged to contact their instructors to discuss their individual needs for accommodations.

Other expectations:

Lecture material should be reviewed before the next class since any questions on old material will be addressed only at the beginning of class. The reading should be done (at least skimmed over) before it's covered in lecture, and reviewed afterwards. All assignments must be legible, well-formatted, on-time and relatively complete. Please, please, please make sure you observe the plagiarism rules for the take-home projects. Any students who pass in similar projects will be referred to the Honor Board.

CS 232 - Data Structures
Course Calendar*

*This is a tentative schedule and may be changed during the semester. An up-to-date version will be available at the course page on Moodle.

Homeworks will be assigned on **Mondays** and due before class the following **Monday.**

Week of:	**Topics/Events**:
September 6 (first day of class)	Chapter 1: Java basics
September 8	Finish Chapter 1; Chapter 2: Object-oriented programming
September 15	Chapter 3: Fundamental Data Structures
September 25	Chapter 4: Algorithm Analysis
September 29	Chapter 5: Recursion
October 6	Chapter 6: Stacks, queues, and deques **10/6: Midterm Project assigned**
October 13	**10/13: No class (Columbus Day)** Chapter 12: Sorting and Selection
October 20	Chapter 12 continued; review **10/22: Midterm project due**
October 27	**Midterm: October 27** Chapter 8: Trees
November 3	Chapter 9: Priority Queues
November 10	Chapter 10: Maps, Hash Tables, and Skip Lists
November 17	Chapter 11: Search Trees **Final projects assigned**
November 24	Chapter 11 continued **11/26-12/1: Thanksgiving Break**
December 1	Chapter 14: Graphs
December 8	**12/9: Last day of classes; final projects due**
December 12	**6pm – 9pm: Final exam**