COMPSCI 223 – Data Structures using Java

Spring 2015, McGraw 115

Section 1: MW 3:30pm-4:45pm

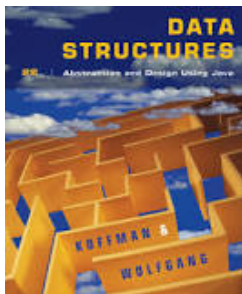|	
Instructor	**Cheng Thao**
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Phone	262-472-5002
Office Hours	MWF 9am-10am, TR 1pm-2pm or by appointment

Course Description

In this course, we follow a hybrid approach to learn data structures. That means, we study theory and implement basic data structures including lists, stacks, queues and trees while taking advantages of built-in Java implementation. We also use object-oriented design and programming methodology, including inheritance and polymorphism, and apply these in the development of more complicated data structure and apply them in large programming projects.

Students will learn how to implement and use data structures such as list, queue, stacks, and trees. They will learn several algorithms and how to analyze the runtime algorithms.

Prerequisites

- COMPSCI 220 Concepts of Programming or COMPSCI 222 Intermediate C++. If you have taken COMPSCI 222 but not COMPSCI 220, it is highly recommend that you take the C++ section (section 2) of COMPSCI 223.
- A student **may not earn credit** for any course, which is a pre-requisite for another course in which credit has been earned unless prior departmental approval is obtained.

Text & Software

TEXT: *Objects, Abstraction, Data Structures and Design Using Java Version 5.0.* Elliot B. Koffman, Paul A. T. Wolfgang, Wiley Higher Education. ISBN: 978-0-471-69264-5 available through UW-Whitewater Book Rental.

SOFTWARE: The lab computers have all the necessary software for Java development. If you want to develop Java programs on your own desktop or laptop, you may download the Java Development Kit (JDK) from http://www.oracle.com/technetwork/java/javase/downloads/index.html. An Integrated Development Environment tool (IDE) is not required but I would recommend you download and install one such NetBeans IDE (https://netbeans.org) or Eclipse IDE (http://eclipse.org).

Tentative Schedule

Week	Chapter	Topics	Activities
1/19		Syllabus, pretest	
1/26	Appendix	Java review (class, inheritance)	
2/2	1	Java review (interface, generics)	
2/9	2	List (array list)	Prog 1 due
2/16	2	List (single linked list, double linked list)	
2/23	3	Stack	Exam 1
3/2	4	Queue	
3/9	5	Recursion	Prog 2 due
3/16	5	Recursion/General Tree	
3/23		Spring Break	
3/30	6	Binary Tree	Exam 2
4/6	6	Binary Search Tree	
4/13	7	Set & Maps	Prog 3 due
4/20	7	Sorting	
4/27	8,10	Sorting/Graph	
5/4	10	Graph	Prog 4 due
5/11		Final exam week (5/11 4:45pm-6:45pm)	Exam 3

Important dates:
Jan 27 Last day to add a class
Feb 2 Last day to drop a course without "W" grade
Feb 27 Last day to drop a course with "W" grade
March 23 Spring Break
April 29 Last day to withdraw

Grading

Grade Items	Weights
4 Projects	40%
Labs, HW	15%
3 Exams	45%
Extra credits	

I will let students know about extra credits opportunities through out the semester. These activities include attending a talk, a workshop, or an activity related to computer science.

Grading Scale

93-100% A	87-89% B+	77-79% C+	67-69% D+	0-59% F
90- 92% A-	83-86% B	73-76% C	63-66% D	
	80-82% B-	70-72% C-	60-62% D-	

Grading Policies

- Labs/HW
  - Labs and homework assignments are 10 points each.
- Programming projects.
  - Graded using a 10 point scale.
  - Late programming assignments are penalized 1 point for each day late.
  - Copying someone else's work will result both person getting zero.
  - You are not allowed to work in group and submit the same program.
  - You may discuss the program with your classmates, but everyone must submit their own code.
  - Tutors are not allowed to give you code to the programs.
- Makeup exams are only given for emergency reasons.

Additional Information and Resources

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
10 a.m. - 12:00 p.m.		MG 104 by appt. 10:45-1:45 HANS PereraAH18@uww.edu	MG 122 CS 174, 222, 223 10:15-12:15 STEPHEN	MG 104 by appt. 10:45-1:45 HANS PereraAH18@uww.edu
1:00 p.m. - 3:00 p.m.	MG 122 CS 172 2-3 JENNIFER (TENTATIVE)	MG 122 CS 174, 222, 223 (C++) 12:15-3:15 STEPHEN	MG 122 CS 172 2-3 JENNIFER (TENTATIVE)	MG 122 CS 174, 222, 223 (C++) 12:15-3:15 STEPHEN
3:00 p.m. - 6:00 p.m.		MG 122 CS 171, 172, 174, 222, 223, 381, 382 3:00-6:00 p.m. ADAM		

Religious Beliefs Accommodation

Board of Regents policy states that students' sincerely held religious beliefs shall be reasonably accommodated with respect to scheduling all examinations and other academic requirements. Students must notify the instructor, within the first three weeks of the beginning of classes, of the specific days or dates on which they will request accommodation from an examination or academic requirement. For additional information, please refer to the section in the University Bulletin and the Timetable titled "Accommodation of Religious Beliefs."

Academic Misconduct

The University believes that academic honesty and integrity are fundamental to the mission of higher education and of the University of Wisconsin System. The University has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students who violate these standards are subject to disciplinary action. UWS Chapter 14 identifies procedures to be followed when a student is accused of academic misconduct. For additional information, please refer to the section in the Student Handbook titled "Student Academic Disciplinary Procedures."

Absence for University-Sponsored Events

University policy adopted by Faculty Senate and the Whitewater Student Government states that students will not be academically penalized for missing class in order to participate in university-sanctioned events. They will be provided an opportunity to make up any work that is missed; and if class attendance is a requirement, missing a class in order to participate in a university-sanctioned event will not be counted as an absence. A university-sanctioned event is defined to be any intercollegiate athletic contest or other such event as determined by the Provost. Activity sponsors are responsible for obtaining the Provost's prior approval of an event as being university-sanctioned and for providing an official list of participants. Students are responsible for notifying their instructors in advance of their participation in such events.

University Statement

- The University of Wisconsin—Whitewater is dedicated to a safe, supportive and non-discriminatory learning environment. It is the responsibility of all undergraduate and graduate students to familiarize themselves with University policies regarding Special Accommodations, Misconduct, Religious Beliefs Accommodation, Discrimination and Absence for University sponsored events. (For details, please refer to the Undergraduate and Graduate Timetables; the "Rights and Responsibilities" section of the Undergraduate Bulletin; the Academic Requirements and Policies and the Facilities and Services sections of the Graduate Bulletin; and the "Student Academic Disciplinary Procedures" [UWS Chapter 14]; and the "Student Nonacademic Disciplinary Procedures" [UWS Chapter 17]). Programing assignments are graded using a 10 point scale.