CSCI 241: Data Structures
Winter 2017
Syllabus

Logistics:

- Instructor: Shameem Ahmed, Office: CF 491
- Lectures: Monday, Tuesday, Wednesday, Friday; 9:00–9:50 am in CF 226
- Office hours: TBA
- Prerequisites: CSCI 145 or 146; MATH 124 or 157
- Instructor contact
    - e-mail: Shameem.Ahmed@wwu.edu
    - Phone: 360-650-2624

Course Description:

This course introduces students to the design and implementation of some of the most commonly used data structures, including graphs, trees, and hash tables. It also introduces several sorting algorithms along with the notion of algorithmic complexity. Programming in Java is required in implementation of concepts.

Course Outcomes:

On completion of this course, students will demonstrate:

- Basic understanding of classic data structures including trees, graphs, and hash tables.
- Basic understanding of various sorting algorithms.
- The ability to select and design the proper data structures to problems requiring complex data structures.
- The ability to select the proper sorting algorithms for a problem.
- The ability to make judgments about the selected data structures for a problem.
- The ability to implement the introduced data structures and sorting algorithms.

Auxiliary Course Outcomes

- To improve your understanding of how and why to use pair programming.
- To improve your programming skills and your familiarity with Java.
- To improve your understanding of how and why to use version control for software development.

Textbooks

There are two textbooks for the course. The primary textbook is **Introduction to Algorithms, 3rd Edition by Thomas Cormen, Charles Leiserson, Ronald Rivest and Clifford Stein** (ISBN-13: 978-0262033848). It is the textbook that you will use in CSCI 305 and CSCI 405; if you buy it now it can serve as a good reference on some of the more advanced data structures covered in class.

The other is **Building Java Programs: A Back to Basics Approach, 3rd Edition by Stuart Reges and Marty Stepp** (ISBN-13: 978-0-13-336090-5), which you may already have from CSCI 145.

Access to the online content associated with the book is not required. This book gives a good introduction to Java, is fairly gentle and has nice explanations, but does not cover all of the material for CSCI 241. No problems will be assigned from either book; they are intended to serve as references and resources for you.

Other relevant materials covered from other books will be shared with you.

Software

The labs already have Oracle's Java Development Kit (JDK) 7 as well as some IDEs (Eclipse, jGrasp, etc.) installed for both Windows and Linux. If you would like to work from home, you are welcome to download Eclipse, jGrasp, or any IDE of your choice for your own use.

Grading

Grades will be based on the following percentages:

Exams	Midterm	20%
	Final	25%
	4 In-class Equally-weighted Quizzes	10%
Programing Assignments	Program 1	15%
	Program 2	15%
	Program 3	15%
Total		**100%**

Grades will be assigned on the total of the assessment items according to the following percentages:

Percentage	Grade
90-100	A
80-89	B
70-79	C
60-69	D
Less than 60	F

The instructor reserves the right to "curve" grades at the end of the course if it provides a spread of grades that more accurately represents the quality of work in the class – **the instructor will only do this if it improves your grade**.

The use of '+' or '-' discriminators for the final grade is completely at the discretion of the instructor.

If you have been an engaged student, the instructor reserves the right to round up your final grade (e.g. 89.2% -> 90% rather than 89%). An engaged student is one that attends class, asks and/or answers questions in class and/or is helpful to other students.

Deadlines and Late Work Policy

Please refer to the **course calendar** (canvas) for the most up-to-date deadlines. **No late work will be accepted**. If you miss a deadline, quiz or exam due to a medical emergency, you must present a valid medical excuse (once you are no longer contagious, please) and we will determine a substitute

assignment. If you know in advance that you will be unable to take an exam or quiz at the scheduled time, let the instructor know **at least one week prior to the quiz or exam**, and we may be able to reschedule it for an earlier day and time.

Academic Honesty

As a future professional, your integrity is crucial. It is your responsibility to read and be familiar with the university's academic dishonesty policy, found in Appendix D of the Western Washington University Course Catalog. Following these guidelines and those of the department, plagiarism on an assignment or cheating on a quiz or exam will result in failing the course (grade of F) and a letter will be added to your permanent academic record.

Computer Labs

This class does not have a scheduled lab, but several computer labs are available to use. CF 162, 164, 414 and 418 are open 7am-11pm, and for Computer Science majors, CF 405 is also available (with priority to senior students). Each of these labs has the Java IDEs available for you.

Technical Assistance

If you are having problems with any of the machines in a Computer Science Department lab, contact CS Support via email at cs.support@wwu.edu or call them at extension 6518.

Assistance on Course Materials

Please come to designated office hours to discuss problems with the course material, assignments, or any other course related events. You can also send email describing your problem. The subject line must include **CS241 – Data Structures**. Failure to include this phrase may delay getting a response or in worst case, no answer at all. In general any faculty receives tremendous amounts of email every day, especially during critical days when assignments are due or exams are approaching. Please allow 24 hours to get a response. Most cases it will be much sooner than that, however, wait at least 24 hours before sending the same email again or a new one describing the same problem.

Students are also encouraged to extensively use the discussion pages on canvas for course related topic. You are welcome to discuss problems related to programming assignments, however, your assignment have to be your own work.

Disabilities

If you wish to request academic accommodations due to a disability please contact disAbility Resources for Students in Old Main 110 or at 360.650.3083 (voice) or 360.650.3725 (TTY) or via email at drs@wwu.edu. If you have a letter from disAbility Resources for Students indicating you have a disability that requires academic accommodations then please present the letter to me so that we can discuss accommodations for this class.

Note: This syllabus is subject to change. Any changes made to the syllabus after the first day of class will be announced in class.