



Computer Science 271 – Data Structures

Time: 10:20am – 12:20pm Tu, Th **Place:** Harrington 119

Instructor: Justin Miller **Email:** millerju @ uwosh.edu

Office Hours: 12:20pm-12:50pm Tu, Th in Harrington 119

Additional Office Hours: Dr. Naps (11:30-12:30MWF, 4-5TuTh)

Required Text: Data Structures by Gilberg & Forouzan (2001), ISBN: 053495216X

Recommended Text: C++ for Java Programmers by Weiss (2004), ISBN: 013919424X

Course Website: http://www.uwosh.edu/faculty_staff/millerju/cs271/home.html

Course Goals:

- Understand and program using Advanced C++ topics (Classes, Pointers, STL, etc.)
- Understand methods of representing data in memory (Trees, Heaps, Queues, Graphs, etc.)
- Understand the algorithms that access the data (Searching, Sorting, etc.)

Course Outline:

- | | |
|--|---------------------|
| a) Linux | h) Recursion |
| b) C++ (Pointers, Classes, Templates, STL) | i) Balanced Trees |
| c) Algorithm Efficiency | j) Huffman Trees |
| d) Linked List | k) Heaps |
| e) Stacks | l) Hash Tables |
| f) Queues | m) Advanced Sorting |
| g) Trees & Binary Trees & Red Black Trees | n) Graphs |

Grading: Your course grade will be based on exams, homework, and quizzes as follows:

- 3 exams, each worth 20% of your grade, for a total of 60% of your grade
- 6 homework assignments, each weighted equally at 5%, worth a total of 30%
- 10 quizzes, each weighted equally at 1%, worth a total of 10% (taken in-class & on-line)
- Your letter grade for the course will be based on the following scale.

<u>Average</u>	<u>Grade</u>
>= 90	A
80-89	B
70-79	C
60-69	D
< 60	F

- Grades of AB, BC, and CD may be assigned in borderline grade situations.

Exams: will be given in class on Tuesday February 27th, Thursday April 5th, and Thursday May 10. Let the instructor know as far in advance as possible if you can not attend on one of these dates so that makeup arrangements can be made. The exams will be closed book and closed notes. The third exam is not a cumulative final. You must take all 3 exams in order to pass the course.

Homework assignments: will be given regularly throughout the semester. Some assignments may be written problem sets; others may be c++ programming assignments. You can work on written homework in study groups but you must write up your own answers individually and in your own words. All programming assignments must be done individually (no programming in teams). Copying someone else's answers or programming in teams may result in disciplinary actions.

Late Penalty: Late homework of any kind is not allowed, and will not be accepted. Homework due dates & times will be specifically supplied when the homework is initially assigned.

Attendance: You are expected to attend ALL the course sessions. Furthermore you are expected to participate in the classroom discussions and activities to the best of your abilities. It is difficult to envision a student missing and/or arriving unprepared to class sessions and still succeeding in the course.

Labs: Occasionally on Tuesdays, this class will meet in the Halsey Computer Lab for part of the period. Lab days and times will be announced ahead of time.