Instructor  Dr. Dianne Foreback  
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**office:**  CAS 243  
**phone:**  330-972-7434  

Website  
http://www.cs.uakron.edu/~dforeback/classes/ds/  username/password given in class  

Lectures  
Class 70512 Section 001, CAS 136  Monday and Wednesday, 2:45 – 4:00 p.m.  
Class 75022 Section 002, CAS 134  Monday and Wednesday, 4:15 – 5:30 p.m.  

Office Hours  
Monday 12:30 – 2 p.m.  
Wednesday 11 a.m. – 12:30 p.m.  
By appointment. If you have a scheduling conflict and cannot attend scheduled office hours, please send me an email to request an appointment.  

Prerequisites  
3460:210 (Computer Science II) and either 3450:221 (Analytic Geometry – Calculus I) or 3450:210 (Calculus with Business Applications) with grades of C- or better  

Required Text  

Course Description  
The study of data structures is core to the CS curriculum, providing the techniques and tools necessary to construct efficient solutions for real world problems. This course presents the fundamentals of data structures including linked structures, lists, stacks, queues, recursive thinking, graphs, and tree structures for problem resolution, sorting algorithms and hashing. As such, it is a study of the design, implementation, and choosing the appropriate data structures required to solve specific problems.  

Course Objectives  
- Equip students with an understanding of common abstract data types and their corresponding implementations  
- Understand the performance and memory tradeoffs of different concepts and implementations  
- Reinforce problem solving and programming skills using the C++ Programming Language  

Tentative Course Outline – per the required course textbook (additional topics may be added)  
- Chapter 1  
- Chapter 2  
- Chapter 3  
- Sections 4.1 – 4.3, 4.6 – 4.8  
- Chapter 5  
- Sections 6.1 – 6.4  
- Sections 7.5 – 7.7, 7.11 – 7.12  
- Sections 9.1 – 9.3, 9.5 – 9.7  
- Section 10.1  

Lectures, Attendance and Class Participation  
Students are expected to prepare and **attend each meeting** and to participate in class. Please be in class on
time so as not to disturb your classmates. Many presentations are posted on the course website. However, some material covered in lectures, including demos and problems assigned in class may not be available in these presentations. You are expected to attend class to obtain the full benefit of the course. Active participation during a lecture will help you learn the material and succeed in class. There are no make-up quizzes, make-up exams, make-up class participation points and no do-overs. Upon rare and formally documented (e.g. a doctor’s excuse that can be verified and stating the date/time to be excused) a make-up exam or project extension may be given. No make-up quizzes are given; the lowest quiz score is dropped.

Your grade for class participation depends on your attendance in class, participating during lectures and potentially writing an answer to a “pop-question” I pose during the lecture. This pop-question cannot be made-up; if you miss the lecture, you earn no credit on this question but it is counted in the total points possible for your class participation grade. To calculate your class participation grade, the points you earn in all areas of class participation (pop-questions answered in writing, verbally answering questions in class and attendance) is divided by total of available class participation points then multiplied by 10. For example, if you earned 40 out of 50 possible class participation points, you will earn 40/50 * 10 = 10 points. This is done for weight your grade properly (see the “Grades” section in this document.)

Exams
There will be a total of two exams, one midterm exam (held during class) and a final exam (held during finals week). Both exams are closed book, closed notes, and must be the student’s individual work. It is expected that you take each exam at the scheduled time unless you have a verifiable documented illness, in which case I expect you to contact me BEFORE the exam, if possible. You will be tested on the material we covered in class, from the book, from additional resources, in the presentations, homework assignments and projects. The textbook or the slides alone may not be sufficient for adequate preparation for the exams; please attend lectures.

You must bring a picture identification to the exams. We will review the exam once graded in class. You must return the exam immediately after our in class review to earn the assigned grade, and a request to review any grading discrepancies must be noted on this day. You are responsible for attending class during the review.

Quizzes
There will be approximately 4 quizzes. The tentative dates for quizzes are posted on the class website in the course schedule. There are no make-up quizzes. If you miss a quiz, a grade of zero points is assigned. The lowest quiz grade is dropped.

Programming Projects
There will be approximately 4 programming projects. The projects will be submitted and graded electronically. The details on project submission will be given to you together with project assignment.

All graded work, including programming projects, should be the student’s individual work.

Late programming projects are penalized. The penalty for submitting a project after the due date/time follows. Submitting within 24 hours after the due date/time receives a 10% penalty. Submitting within 24-48 hours receives a 25% penalty. Submitting within 48-72 hours receives a 50% penalty. No projects are accepted after 72 hours (3 days) of missing the due date/time. However, I may waive the late policy penalty conditions for the programming projects only in case of a documented and verifiable illness or another extraordinary circumstance. In either case, you have to contact me immediately. With respect to
programming projects, my decision to grant you a waiver is partially influenced by the degree of completion of the work assigned.

Any grading discrepancies should be noted as soon as possible and by the end of the next scheduled office hours.

Additional policies may be posted on the class website.

Cooperation on Programming Projects
Discussion with your peers is an excellent way to learn. If you don’t understand something, discussing it with someone who does can be far more productive than beating your head against the wall. Having advocated discussion, then, I’ll be clear about what is allowed, and what is not. In general, students are allowed to cooperate as follows: you are allowed to discuss with other students the assignment, and general methods for solving the assignment. However, you are not allowed to work with someone else to actually solve the assignment, or to write code (even pseudocode) for a program, and you are certainly not allowed to copy anyone else’s solution including solutions found on the internet or other resources; doing any of these things will be considered cheating and will constitute grounds for failing the course.

Again, all assignments should be the student’s individual work. For coding projects, you should code the projects individually. This means that you should not take code from the internet, books or elsewhere and submit as yours. Also you should not look at other students’ programs either on the screen or in printouts. You should not copy other students’ solutions. Joint programming is not allowed (unless a group assignment is given). You should be careful not to give others access to your code. This means that you should not keep your program in a publicly accessible directory, you should not leave your computer unattended, and you should not forget to pick up your printouts. If you share your code with another student, this is cheating on your part; you are responsible for the confidentiality of your code. All work turned in for grade shall be exclusively the work of the student whose name appears on the work. Different submissions with equivalent syntax or control flow shall be considered plagiarized. Do not share your code with other students. Note that there is a fine line between discussion and cheating. If you are unsure what is allowed and what isn’t, feel free to discuss the distinction with me, but if something feels uncomfortable, it’s probably not allowed.

Cheating and plagiarism
Incidents of academic dishonesty (such as cheating or plagiarism) will be handled in accordance with university policy by the Office of Student Conduct. At minimum, a score of zero is assigned to any work if violating the no cheating and no plagiarism rule and potentially a grade of ‘F’ for the course. More information can be found at https://www.uakron.edu/studentconduct/code-of-conduct.dot.

Grades
Your final course grade will be calculated as follows:

- midterm exam: 100 points
- final exam: 100 points
- approx. 4 programming projects: 30 points each (120 points total for all projects)
- 4 quizzes: 10 points each, lowest score dropped (30 points total)
- class participation: 10 points

To assess your final course grade, all point values assigned on graded materials are considered. This includes exams, programming projects, quizzes and class participation. The sum of possible scores on all
assignments (projects, quizzes, class participation and exams) is considered 100% and your final course grade will be determined as follows: 100-93% A, 92-90 A−, 89-87 B+, 86-83 B, 82-80 B−, 79-77 C+, 76-73 C, 72-70 C−, 69-67 D+, 66-63 D, 62-60 D− and 59-0 F. There will be no curve at the end of the course. Your score will not be rounded up: if you get 66.99% you will get a D not a D+.

**Use of Electronic Devices**
Unless specifically been given permission, you are not allowed to record or video tape lectures. However, and on an occasional basis, if I write a complex drawing on the board, and you ask me during the lecture if you can take a picture, I may permit this (after I get out of the way).

All phones and electronic devices should be silenced during class. The use of laptops or tablets is allowed provided that they are not a distraction, and that they are used in a way that supports the student's participation in class (taking notes, looking up additional references). This policy will change if it is abused.

**Registration**
All students attending the class must register. Students who fail to register are not permitted to participate. You are expected to attend the class section for which you are registered.

**Accessibility**
Any student who feels that she or he may need an accommodation based on the impact of a disability should contact the Office of Accessibility at 330-972-7928. The office is located in Simmons Hall, 105. More information is available at [https://www.uakron.edu/access/](https://www.uakron.edu/access/).

**Title IX**
The University of Akron is committed to providing an environment free of all forms of discrimination, including sexual violence and sexual harassment. This includes instances of attempted and/or completed sexual assault, domestic and dating violence, gender based stalking, and sexual harassment. Additional information, resources, support and the University of Akron protocols for responding to sexual violence are available at [http://www.uakron.edu/Title-IX/](http://www.uakron.edu/Title-IX/).

**Subject to Change Statement:** The syllabus and course schedule may be subject to change. Changes will be communicated via email or in class.