STUDENT INFORMATION SHEET
CPSC 316/501, DATA STRUCTURES, FALL 2023

Course Information

- **Days/Times/Place**:

70239	CPSC 316 010	TR 3:30 – 4:45 PM	CAS 140
75464	CPSC 501 010	TR 3:30 – 4:45 PM	CAS 140

- **Web page** : *https://timoneilu.github.io/teaching/cs316/*
- **Prerequisites**: One of
  - CPSC 210 (Computer Science II) with a grade of C- or better; and
  - Either CPSC 221 (Analytic Geometry – Calculus I) or CPSC 210 (Calculus with Business Applications) with grades of C- or better.

Course Description

Course Rationale :

The study of data structures is core to the computer science curriculum, providing the techniques and tools necessary to construct efficient solutions for real world problems. This course presents the fundamentals of data structures for problem resolution. As such, it is a study of the design, implementation, and choosing the appropriate data structures required to solve specific problems. Topics include: graphs and graph algorithms, external sorting, hashing, advanced tree and file structures.

Learning Objectives :

- To demonstrate a sound understanding of many of the fundamental algorithms and data structures that lie at the heart of computer science.
- To show the ability to reason clearly and understand why and under what conditions one algorithm may be superior to another.
- To exhibit the ability to teach and learn from others.

Course Personnel

Instructor : Dr. Tim O'Neil
Contact Info : *Office* : CAS 221A *Phone* : (330) 972 – 6492 E-*mail* : *toneil@uakron.edu*
Office Hours : M 10:30-11:30, W 2:30-3:30 in Polsky M183J; TR 2:15-3:15 in CAS 221A; and by appointment.

Course Outline

Textbook : *Data Structures and Other Objects Using C++* by Main and Savitch (4th Ed., 2011).
Topics :

- Derived classes and inheritance
- Elementary data structures
- Stacks and queues
- Sequential and linked implementations of stacks and queues
- Binary trees and general trees
- General and balanced binary search trees
- Sorting algorithms - selection sort, insertion sort, heap-sort, merge-sort and quick-sort
- Searching methods, sequential and binary
- Hashing
- Graphs

Course Grading

Items :

26%	Midterm exam in-class (Thursday October 12 in class)
34%	Final exam (Tuesday December 12, 5:15 PM)
15%	Programming Projects
15%	Homework-Based Quizzes
10%	Class Participation

Approximate Scale :
A 90 – 100, B 80 – 89, C 70 – 79, D 60 – 69. Plus/minus grades assigned at my discretion.

Other Class Policies, Fall Semester 2023

Registration/Drop/Withdrawal

- Students whose names do not appear on the university's official class list by **Sunday September 3** will not be permitted to participate (attend class, take exams or receive credit).
- Students may drop a course online (without my signature) through **Sunday September 10**. Courses dropped by this date will not appear on a student's transcript.
- Students may withdraw from a course online (without my signature) through **Sunday October 15**. A "WD" will appear on the student's transcript.

Scholastic Honesty and Professional Integrity

- All work turned in for grade is to be exclusively the work of the student(s) whose name(s) appear(s) on the work. Incidents of academic dishonesty (such as cheating or plagiarism) will be handled in accordance with university policy by the Office of Student Conduct. In particular, the use of sources other than the textbook without citation, including other books, AI tools like ChatGPT and the World Wide Web, will be viewed as plagiarism. (If you're unsure of what constitutes plagiarism, consult the links on my home page.)
- Some of the materials in this course are possibly copyrighted. They are intended for use only by students registered and enrolled in this course and only for instructional activities associated with and for the duration of this course. They may not be retained in another medium or disseminated further. They are provided in compliance with the provisions of the TEACH Act (2002).

In-Class Conduct During Lectures

- Students are expected to attend all class meetings prepared (i.e. carrying the textbook, note paper, writing instruments, etc.) and participate. You may be dropped from this course and receive an "F" on your transcript for repeated absences (BOT Rule 3359-20-05D, effective 2/14/2013).
- All cell phones, etc., are to be turned off or switched to manner mode during class. Portable computers will be permitted until this privilege is abused.

In-Class Quizzes

- Written resources (i.e. textbook and printed notes) may be used during in-class quizzes; *electronic ones may not*. In-class quizzes may not be made up if absent, late or unprepared.
- Students have one week from the return of a graded quiz to seek corrections from me regarding grading; after that no changes will be made to scores.

In-Class Exams

- The use of electronic devices is forbidden during in-class exams. Food and drink are also banned.
- Students who leave the room during an exam, or who use electronic devices during an exam, may not continue working on that exam.
- Make-up exams will be given only under extraordinary circumstances. Arrangements should be made prior to the exam and proof furnished.
- Students have one week from the return of a graded exam to seek corrections from me regarding grading; after that no changes will be made to scores.

Homework and Programming Assignments

- There will be no extra credit assignment or do-overs so don't even ask.
- Homework assignments and projects are to be submitted electronically in the manner specified in class. Submissions to my personal e-mail account will be ignored.
- Late assignments will be accepted but penalized according to the following scale: 10% penalty for one calendar day late, 25% for 2, 50% for 3, 75% for 4, and 100% (i.e. no credit) for 5 calendar days (i.e. one week) late. An exception will be made only for medical emergencies.
- All programming assignments must be completed within 10 calendar days of the original due dates in order to be eligible for a passing grade.
- All programming assignments will be graded according to how well they execute on the computers in CAS 241 or 254. It is your responsibility to check your work on our equipment prior to submission.
- All class assignments must be submitted by 5:00 PM on **Friday December 8**. Nothing will be accepted after this time.
- Students have one week from the return of a graded assignment to seek corrections from me regarding grading; after that no changes will be made to scores.

Diversity Statement (per Faculty Senate)

This class, as well as the broader University of Akron community, respects diversity and strives for equity and inclusion of all students. Diversity includes how we as individuals identify along the lines of race, color, religion, sex, sexual orientation, gender identity or expression, age, national or ethnic origin, citizenship status, disability, status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, military status, genetic information, or status as a veteran. Inclusion and respect for diversity make the classroom and the larger community stronger and foster dialogue and democratic decision making. As part of ensuring this class is a safe space for all students, please avoid use of negative stereotypes and insensitive or hateful statements toward groups of people. Please respect your classmates' pronouns. Each of us is responsible for creating a safer, more inclusive environment. If you feel there is something I can do to make the classroom more inclusive please let me know either in person, via email, or by placing an anonymous note in my mailbox. For support services on campus, go to www.uakron.edu/ie/lgbtq or www.uakron.edu/zipassist.

Other

Familiarize yourself with the content at

https://www.uakron.edu/oaa/faculty-affairs/what-students-need-to-know

regarding the ethical use of AI tools, accessibility, Title IX and sexual harassment and violence.

DISCLAIMER: Save for changes that substantially affect implementation of the evaluation (grading) statement, this document is a guide for the course and is subject to change with advance notice.