CS 361: Syllabus -- Summer 2017

Steven Zeil

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Contents:

1 Course Description

1.1 When and Where

Website: Blackboard and https://www.cs.odu.edu/~zeil/cs361/sum17/

This is an internet-based course. There are no regularly scheduled class lecture times. For the most part, students will work at their own chosen times, subject to deadlines for assignments and exams (described later under Course Policies).

There will be an optional Orientation session conducted via network conferencing at the start of the semester. Additional similar sessions may be announced later in the semester.

1.2 Objectives:

This course explores data structures, algorithms for manipulating them, and the practical problems of implementing those structures in real programming languages and environments. Heavy emphasis is placed upon the analysis of algorithms to characterize their worst and average case requirements for running time and memory.

Perhaps more than any other course, CS361 should expand the students “toolbox” of basic techniques for manipulating data at both the conceptual and the concrete level. At the conceptual level, the student will see a broad selection of standard practices and approaches used in program design. At the concrete level, the student will begin what should be a career-long practice of accumulating useful, reusable code units.

2 Basic Information

2.1 Instructor

Steven J. Zeil	E&CS 3208
(757) 683-4928	Fax: (757) 683-4900
zeil@cs.odu.edu	

Important: All email related to this course should have the phrase “`CS361`” somewhere in the subject line. This flags your message in my mailbox for faster attention. Omit this, and your message may get lost amid the ton of daily spam and ODU administrative messages I get each day.

I try to respond to all (properly marked) messages within 24 hours M-F, within 48 on weekends & holidays.

2.1.1 Office Hours

Students may meet with me in person, by telephone, or via internet-conferencing. A week-by-week schedule of available meeting times can be found by going to the my home page http://www.cs.odu.edu/~zeil/ and clicking on “Office Hours and Appointments”.

2.2 Text

In addition to the readings at the course web site, listed at the top of this document, the (required) textbook for this course is:

- Weiss, *Data Structures & Algorithm Analysis in C++*, 4e, 2013, Pearson PH, 013284737X 978-0132847377

2.3 Course Prerequisites

The prerequisites for this course are:

- CS 250, Problem Solving and Programming, or CS 333, Problem Solving and Programming in C++
- CS 252 Introduction to Unix for Programmers
- MATH 163, Pre-Calculus II,

or equivalents.

2.4 Software Requirements

2.4.1 Required

- Web browser: Most up-to-date web browsers should suffice for this course. Your browser will need to run Javascript, particularly when taking self-assessments, quizzes and exams, which are hosted on the ODU BlackBoard system.
- ssh, sftp: Any program should do. The CS252 website has some recommendations.
- Java 8 JRE, used for algorithm demos

2.4.2 Optional:

- C++ compiler: The “official” compiler for this course is the Free Software Foundation’s g++ (also known as gcc or GNU CC), version 4.8.4 or higher. This is the compiler that the instructor and/or grader will use in evaluating and grading projects. If you have access to other compilers, you may use them, but *you* are responsible for making sure that their projects can be compiled by the instructor and/or the course's grader using the official compiler.

You may want to develop your programs on the most convenient compiler and then port it over to the Dept's Linux machines for final testing. Please don't underestimate the amount of time that may be involved in coping with subtle differences among compilers.

You can do all work in this course using g++ on the CS Dept Linux servers via ssh/X. If you like, however, you can obtain the g++ compiler for free from a variety sources.

- X, and its compressed cousin, X2Go, allows Linux programs running on our servers to open up windows on your PC. This opens up a whole world of window/graphics/mouse-based software that you may find easier to work with than the command-line based alternatives. The CS 252 website has a substantial discussion of free X server software.

2.5 Computer Accounts

Students will need two network accounts to participate in this class:

- An ODU ITS (Midas) account. This is the account associated with your `@odu.edu` email. It will allow you to log into the course's Blackboard site when taking quizzes and exams.

  All ODU students automatically receive this account, though you may need to activate yours, particularly if you are new to ODU.

- An account on the CS Dept. network. This will be used for access to the CS dept computing resources, and for accessing and submitting assignments.

  You may have a CS account already if you were registered for a CS class last semester. If not, the account setup and password can be initiated at http://www.cs.odu.edu/ by clicking on "Account Creation" under "Online Services".

  A few notes about this:

  - Typically, new accounts can be created no earlier than 1-2 weeks before the start of classes.
  - There are time lags in the way that information flows around the University and within the CS network.
    - Typically you will need to have been enrolled in a CS course for 24-48 hours before you can create an account.
    - Once your account is activated, you may need to wait another 24 hours before your account information becomes available to the course website and you are able to access the course's assignment pages.

  > All students in this course are responsible for making sure they have working accounts prior to the first assignment.

Students will have access to the Dept's local network of Linux workstations and Windows PCs in Dragas Hall and the E&CS building. All students can access the Unix network and the Virtual PC Lab from off campus or from other computer labs on campus.

3 Course Policies

3.1 Due Dates:

The course is divided into three parts. Each part has associated assignments and a closing exam. (The final exam following Part III, is cumulative). Most assignments are maked with an explicit due date, and are due at the end of that day (11:59:59PM, ET). You will find these dates on the outline page and on the course Announcements page on Blackboard.

Late assignment submissions will be accepted, at a 5% per day penalty, up until the start of the final exam. Submissions will not be accepted once the scheduled starting time of the final exam has begun.

> Exceptions to these dates will be made only in situations of unusual and unforseeable circumstances beyond the student's control.

"I've fallen behind and can't catch up", "I'm having a busier semester than I expected", or "I registered for too many classes this semester" are *not* grounds for an extension.

3.2 Academic Honesty:

Everything turned in for grading in this course must be your own work.

The instructor reserves the right to question a student orally or in writing and to use his evaluation of the student's understanding of the assignment and of the submitted solution as evidence of cheating. Violations will be reported to the Office of Student Conduct & Academic Integrity for consideration for possible punitive action.

Students who contribute to violations by sharing their code/designs with others may be subject to the same penalties.

Students are expected to use standard Unix protection mechanisms (`chmod`) to keep their assignments from being read by their classmates. Failure to do so will result in grade penalties, at the very least.

This policy is *not* intended to prevent students from providing legitimate assistance to one another. Students are encouraged to seek/provide one another aid in learning to use the operating system, in issues pertaining to the programming language, or to general issues relating to the course subject matter.

> Students should avoid, however, explicit discussion of approaches to solving a particular programming assignment, and under no circumstances should students show one another their code for an ongoing assignment, nor discuss such code in detail.

Use of Online Resources

You may **not** post details of course assignments, projects, or tests at online Forums, Bulletin Boards, Homework sites, etc., soliciting help.

You may use information that you have not solicited but have located, subject to the following restrictions:

- Just as when writing a paper, if you use someone else's ideas, you must cite your sources appropriately. Within code, such citations appear in comments.

  Example:

```
⋮
double x = 23.0;
double xsqrt = sqrt(x);
// Search algorithm based upon code by S Zeil at
// https://www.cs.odu.edu/~zeil/cs361/latest/Public/functionAnalysis/index.html#orderedsequentialsearch
int loc = 0;
while (loc < arraySize && numbers[loc] < xsqrt)
⋮
```

- Just as when writing a paper, if you use someone else’s words (code), you must cite your sources appropriately **and** mark the quoted text. Within code, such citations appear in comments.

  Example:

```
⋮
double x = 23.0;
double xsqrt = sqrt(x);
// Begin quoted code from  S Zeil at
// https://www.cs.odu.edu/~zeil/cs361/latest/Public/functionAnalysis/index.html#orderedsequentialsearch
int loc = 0;
while (loc < listLength && list[loc] < searchItem)
   {
    ++loc;
   }
// End quoted code
⋮
```

- Failure to appropriately cite any such “found code” will be taken as evidence of plagiarism.

- The overall principle stated in the first sentence of this section remains in effect. “Everything turned in for grading in this course must be your own work.” If the bulk of your assignment, project, test answer, etc., are copied, even with appropriate citation, to the degree that, in the judgment of the instructor, you have not demonstrated your own knowledge of the course material, you will receive a zero for that submission.

3.3 Grading:

Assignments & Quizzes:	45%
Part 1 Exam:	15%
Part 2 Exam:	15%
Final Exam:	25%

Further notes on grading.

4 Educational Accessibility:

Old Dominion University is committed to ensuring equal access to all qualified students with disabilities in accordance with the Americans with Disabilities Act (ADA). The Office of Educational Accessibility (OEA) is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you experience a disability which will impact your ability to access any aspect of the course, present me with an accommodation letter from OEA so that we can work together to ensure that appropriate accommodations are available to you.

- If you feel that you will experience barriers to your ability to learn and/or complete examinations in the course but do not have an accommodation letter, consider scheduling an appointment with OEA to determine if academic accommodations are necessary.

The Office of Educational Accessibility is located at 1021 Student Success Center, and their phone number is (757)683-4655. Additional information is available at the OEA website.

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