

# CS 1428: Foundations of Computer Science I

## Spring 2012

Section 254

**Instructor:** Dr. Jill Seaman  
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**Course Webpage:** <http://www.cs.txstate.edu/~js236/cs1428>

**Office Hours:** M, W: 2:00PM – 3:00PM  
T, TH: 11:00AM – 11:30AM  
and by appt.  
(subject to change).

**Meeting Time/Place:** TH 9:30AM-10:50AM DERR 240

**Text:** Tony Gaddis, Starting out with C++: From Control Structures through Objects, 7th Edition, ISBN: 0132576252

**List of required readings:**  
Chapters 1-7  
Chapter 11 sections 11.1 to 11.8

**Prerequisites:** MATH 1315

**Course Description:** Introductory course for computer science majors, minors and others desiring technical introduction to computer science. Contains overview of history and structure of the digital computer, including binary data representation. Problem solving, algorithm development, structured programming, good coding style, and control structures of C++ are emphasized.

### Course Objectives:

1. Understand the history and structure of the digital computer.
2. Explain the organization of the classical von Neumann machine and its major functional units.
3. Understand binary data representation in the modern computer, including the representation of non-numeric data.
4. Understand that fixed-length number representations affect accuracy and precision.
5. Identify the necessary properties of good algorithms.
6. Discuss the importance of algorithms in the problem-solving process.
7. Understand the software development process, good coding style, and algorithm development.
8. Use pseudo-code or a programming language to implement, test, and debug

- algorithms for solving simple problems.
9. Introduce the syntax of the C++ programming language.
  10. Understand how to use an if or if-else construct to implement a branch in an algorithm.
  11. Understand how to use a for loop for definite iteration.
  12. Understand how to use a while or do-while loop for indefinite iteration.
  13. Apply the techniques of structured (functional) decomposition to break a program into smaller pieces.
  14. Describe the mechanics of parameter passing with emphasis on the difference between pass by value and pass by reference.
  15. Manipulate data in arrays.
  16. Create a new data type by using a structure.
  17. Analyze and explain the behavior of simple programs involving the fundamental programming constructs covered by this unit.
  18. Modify and expand short programs that use standard conditional and iterative control structures and functions.
  19. Describe strategies that are useful in debugging.
  20. Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, and the definition of functions.

<b>Grading:</b>	Attendance:	required	
	Quizzes:	5%	6-10 total quizzes
	Programming Assignments:	30%	7-8 total, lowest is dropped
	Lab:	15%	(section L07 or L08 of CS1428)
	Exam I:	10%	Feb 23
	Exam II:	15%	Apr 5
	Final Exam (comprehensive):	25%	May 8, 8:00am-10:30am

**Attendance:** I record attendance every day and I expect you to be in class every day. However, I realize that there may be some days when you will not be able to attend. For this reason, I will use attendance as "extra credit" towards your grade, but it is NOT optional.

**Quizzes:** Quizzes are usually announced during the previous class and will count for 5 points each.

**Makeup Policy:** Missed quizzes and attendance cannot be made up. Programming assignments cannot be made up. Exams may be made up in exceptional circumstances, with documentation and/or approval from the instructor.

**Late policy for programming assignments:** see the class webpage.

**TRACS:** Your grades will be posted on TRACS. Everything else, including programming assignments and lecture presentations, will be on the class webpage.

**Campus Labs:** Use **MCS 590** to work on your programming assignments. You may also use your own computer, but you should install eclipse. The lab instructors can help you with the installation, or see [http://www.cs.txstate.edu/labs/tutorials/tut\\_docs/Installing%20Eclipse%20C++.pdf](http://www.cs.txstate.edu/labs/tutorials/tut_docs/Installing%20Eclipse%20C++.pdf) for installation instructions.

**HELP:** In addition to the instructor's office hours, there are many places to obtain assistance. For example, tutors are available in MCS 594 or online, CS Dept lab assistants are available in MCS 590, and your lab instructors will hold office hours in their respective offices.

**Notifications from the instructor:** Notifications related to this class will be sent to your Texas State e-mail account. Be sure to check it regularly.

**Withdrawals/drops:** You must follow the withdrawal and drop policy set up by the University and the College of Science. You are responsible for making sure that the drop process is complete.  
<http://www.registrar.txstate.edu/registration/drop-a-class.html>

**Last day to drop: March 22, 2012.**

**Academic Honesty:** You are expected to adhere to the University's Academic Honor Code as described in <http://www.txstate.edu/effective/upps/upps-07-10-01.html>. Also see the Texas State Student Handbook. Unless otherwise stated, all assignments are to be done individually. You may discuss general strategies for attacking assignment problems with other students in the class but you must write your own code. Your submitted programs may be run through an internet service designed for detecting plagiarism in software code.

**Classroom Behavior:** The main rule is to not disrupt other students during class. Please do not arrive late or leave early (without prior permission from the instructor). Cell phones, iPods, etc. should be kept out of sight and turned off or on vibrate during lecture. Laptops and iPads are fine for note-taking (or following the lecture notes) ONLY.

**Accommodations for students with disability:**

Any student with a special needs requiring special accommodations should inform me during the first two weeks of classes. The student should also contact the office of disability services at the LBJ student center.