

CS 1428: Foundations of Computer Science I

Spring 2018

Section 302

Instructor: Dr. Jill Seaman
Comal 210D
js236@txstate.edu

Course Webpage: <http://www.cs.txstate.edu/~js236/cs1428>

Office Hours: W: 1:30pm – 3:30pm
T, R: 1:30pm – 3:00pm
and by appt.

Meeting Time/Place: TR 9:30AM-10:50AM HINES 204

Text: Tony Gaddis, Starting out with C++: From Control Structures through Objects, 9th Edition, ISBN: 0134544846 (8th edition is allowed)

List of required readings:
Chapters 1-7, 11.1-11.8
See course website for a daily schedule.

Required In-Class Response system: We will be using the **Squarecap** classroom response system in class. You will be able to submit answers to in-class questions using a smartphone, tablet, or laptop. To sign up, visit www.squarecap.com on your web browser (Google Chrome is the preferred browser). Squarecap requires a paid subscription (\$10 for one semester).

Course Description: Introductory course for computer science majors, minors and others desiring a technical introduction to computer science. The course emphasizes problem solving, algorithm development, structured programming, good coding style, and programming in C++.

Prerequisites: MATH 1315

Course Objectives:

At the end of the course, the students should be able to:

1. Describe the properties of good algorithms.
2. Design and develop good algorithms using a top-down approach.
3. Use the C++ programming language to implement, test, and debug algorithms for solving simple problems.
4. Explain the concepts of data types, variables, and literals and use them in programs.
5. Write C++ code that solves computational problems.
6. Use an if or if-else construct to implement branching in an algorithm.

7. Use a for loop for definite iteration.
8. Use a while or do-while loop for indefinite iteration.
9. Use functions and parameters to simplify longer programs and reuse code from previous solutions.
10. Demonstrate the mechanics of parameter passing with emphasis on the difference between pass by value and pass by reference.
11. Manipulate data in arrays.
12. Create a new data type by using a structure.
13. Analyze and explain the behavior of simple programs involving the fundamental programming constructs covered in this class.
14. Modify and expand short programs that use the constructs covered in this class.
15. Describe strategies that are useful in debugging.
16. Use a Windows- or Mac-based editor and compiler environment to develop programs in C++.

Grading:	Participation:	8%	Squarecap
	Programming Assignments:	20%	lowest of 7 is dropped
	Lab:	12%	From your lab instructor
	Exam I:	15%	Feb 27 (Tues)
	Exam II:	15%	Apr 12 (Thurs)
	Final Exam (comprehensive):	30%	May 8 (Tues) 8:00am - 10:30am

Participation: Bring a web-enabled device to every class to access the Squarecap system. You will be asked questions in each class. Your participation grade is computed as follows: the minimum of: Squarecap course average / 80% and 100%.

Makeup Policy: Missed Squarecap questions and programming assignments cannot be made up. Exams may be made up in exceptional circumstances, with approval from the instructor.

Reading assignments: There will be assigned reading from the book before each lecture class. A reading schedule will be posted on the class website. You should come to class each day prepared to answer Squarecap questions over the assigned reading for that day.

Late policy for programming assignments: see the class webpage.

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.

TRACS: We will use the TRACS website for the following:

- Grades (Gradebook2 tool)
 - Programming assignment submissions (Assignments tool)
- Everything else will be on the class webpage (including lecture presentations)

Campus Labs: Use **MCS 590** to work on your programming assignments. You may also use your own computer, but you should install CodeBlocks (or some other C++ IDE) first. The lab instructors and tutors can help you with the installation.

HELP: Other than the instructor's office hours, there are other places to obtain assistance:

MCS 590: Computer Science Department Lab Tutors are available in to help with your programming assignments.

CLC (Collaborative Learning Center): Free walk-in tutoring provided by students in the H-LSAMP Scholars Program. 4203 and 4204 RF Mitte Building.

SLAC (Student Learning Assistance Center): walk-in tutoring lab and **Supplemental Instruction:** a nontraditional form of tutoring that focuses on collaboration, group study, and interaction for assisting students undertaking "traditionally difficult" courses. A trained peer who has successfully negotiated the course (the SI Leader) will facilitate 3 one-hour study sessions per week for group study. Our SI Leader is: Michael Margiolos, mwm89@txstate.edu

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/dropping-or-withdrawing.html>

Last day to drop with automatic "W": March 27, 2018.

Classroom Behavior: The main rule is to not disrupt or distract other students during class! Additionally please treat other students and the instructors with respect.

Academic Honesty: You are expected to adhere to both the University's Academic Honor Code as described here: <http://www.txstate.edu/effective/upps/upps-07-10-01.html>.

- You may work together on your programming assignments. If you submit a program that is the result of group work, you must list the names of all contributors in the file header. Each student must submit their own program, even if it is the same as another students'.
- Do not include code obtained from the internet or any other source in your programming assignment (except what is provided by the instructor during the current semester). The penalty for submitting a program that includes code from the internet or any other source outside of the class will be a 0 for that assignment.

Accommodations for students with disability:

Any student with needs requiring special accommodations should contact the office of disability services at the LBJ student center. Students who qualify for extra time for exams must take their test with ATSD and must schedule their test at the same time the test is given in class. Note: you must submit your request with ATSD at least 2 business days before the exam date!

Course Content: There are 7 main topics or units:

Unit 1: Intro to Programming and C++

Unit 2: Expressions and I/O

Unit 3: If/Else Switch

Unit 4: Loops

Unit 5: Arrays

Unit 6: Functions

Unit 7: Structures

For each unit I will provide the following (posted on the class website):

- Reading assignments from the book.
- Lecture slides
- A Programming Assignment

Use of Squarecap in this class:

- Quiz questions over reading at the beginning of class: 2 points for each correct answer
- Questions during the lecture: 1 point for any answer, 1 point for the correct answer
- Group discussion questions during class: 2 points for any answer

Exam coverage:

Exam 1 covers Units 1-3.

Exam 2 covers Units 4-6.

Final Exam covers Units 1-7

Each Exam will have 25 multiple choice questions and 3-5 programming/coding questions.