# CS 5301: Advanced Programming Practicum
# Fall 2015

**Instructor:** Dr. Jill Seaman
Comal 307G
js236@txstate.edu

**Course Webpage:** http://www.cs.txstate.edu/~js236/cs5301

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

**Meeting Time/Place:**    R 6:30PM-9:20PM DERR 240

**Text:**    Starting out with C++: From Control Structures through Objects, **Tony Gaddis**, 8th Edition, ISBN: 0132576252

**Prerequisites:**
- C or higher in CS 3358: Data Structures
- OR consent of the instructor

**Course Description:** Intensive review of programming through data structures. Includes syntax, semantics, problem solving, algorithm development, and in-class exercises.

**Course Objectives:**
1. Students will be able to write syntactically correct code in C++.
2. Students will be able to recognize and use common programming idioms.
3. Students will be able to develop algorithmic solutions to word problems.
4. Students will be able to transform high-level algorithms into code using appropriate data structures.

**Comprehensive Exam policy:** You have two attempts to pass this class with a grade of B or higher.  Dropping this class will count as one attempt.

**Notifications from the instructor:** Notifications related to this class will be  sent to your Texas State e-mail account.  Each week you will receive an email outlining the material we will cover in the next class.

**Grading:**    Lab Exercises:        25%
Quizzes:            25%
Final Exam:        50%    Thurs, Dec 10, 5:00PM to 7:30PM

**Attendance:** is extremely important!

**Lab Exercises:** These will be done during class time in the lab and must be implemented and submitted within the allowed time.

**Quizzes:** There is a quiz at the end of each class on that week's material.

**Academic Honesty:** You are expected to adhere to both the University's Academic Honor Code as described here, as well as the Computer Science Department Honor Code, described here: 2013 0426 HonestyPolicy CSPPS.doc.

**All assignments are to be done individually.** There is no collaboration allowed during the lab or quiz. You must write your own code. Do not include code obtained from the internet in your programming assignment (except what is provided by the instructor). Do not email or otherwise provide an electronic copy of your program to another student.

| Week | Topic | Gaddis Chapters |
|---|---|---|
| 1 | Operators, Data Types & I/O | 1 + 2 + 3 |
| 2 | Branching & Looping | 4 + 5 |
| 3 | Functions & Arrays | 6 + 7 |
| 4 | Pointers & Structures | 9 + 11 |
| 5 | Classes & Objects | 13 + 14 |
| 6 | Operator Overloading & Templates | 14 + 16 |
| 7 | Inheritance & Polymorphism | 15 |
| 8 | Linked Lists | 17 |
| 9 | Stacks & Queues | 18 |
| 10 | Recursion | 19 |
| 11 | Searching & Sorting | 8 + 19 |
| 12 | Trees & Heaps | 20 |
| 13 | Sets & Hash Tables | N/A |
| 14 | Review | 5-7,9,11,13,14,17,19 |