

CS 6311 – Program Construction I (online)

Fall 2017

Instructor Info:

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<http://www.westga.edu/~morsega>

Office Hours:

(All Times Eastern)
M: 1:45 - 3:00 (on BBIM)
T: 11:00-2:45
W: 1:45 - 3:00 (on BBIM)
R: 11:00-2:45

Course Description:

and by appointment

Credits: 2/2/3
Prerequisite: None

An introduction to object-oriented design and programming using fundamental software engineering principles and concepts. Students are expected to develop an object-oriented application using current industry best practices for program development.

REVEL (Textbook):

This course (and 6312 in the Spring) will use an online textbook system called REVEL. You will both read and work selected exercises in this system. The REVEL page can be found at:

<https://console.pearson.com>

You will need to purchase access to this resource. There are a variety of places to do this, however it is recommended that you purchase it directly from the publisher.

Student Responsibilities:

By signing up for this online course, you are taking a big chunk of the responsibility for learning this material into your own hands. The consequences of this include (but aren't limited to):

- Be prepared to devote up to 20 hours per week for this course
- Reading all information presented. This includes not only the textbook, but the content in Moodle and email messages.
- Be aware of due dates. Late work will not be accepted.
- Keep up and do not wait until the last minute to complete the work
- Actively reading and working through the exercises and samples in the textbook. If you get stuck on your lab, probably the first question you'll be asked is, "Have you worked through the sample code in the chapter?"
- Taking the initiative for seeking help. Be it through email, Office Hours, or the discussions forums. Please realize that there's no way I can look in your eyes and tell if you are getting something or not (we very well may never see each other in person!)

My assumption is that you are all busy people. You have jobs, families, friends and attempt to lead a normal life outside of school. With that in mind, you will still be expected to meet the same standards for this course and to master the material.

Other Resources:

The course will take place on the Moodle coursesite at:

<http://courses.cs.westga.edu>

You'll use this site to:

- Locate required exercises for the course
- Upload your files for grading
- Submit the quizzes
- Locate important news features (the News Forum at the top of the page)

Course and Program Expectations:

Computer Science (CS) is a challenging discipline and is not for everyone. We have had students enter the program who have done extremely well in other disciplines, but found that CS is not for them.

Additionally, an online program is not for everyone. Online programs require more discipline, self-teaching, and exploration on the part of the student than a face-to-face program does. Please note that this course is 100% online, so be prepared for the unique challenges that present themselves in this format.

With this in mind, it is the goal of the Program Construction sequence (CS6311 and CS6312) to prepare you for success in the program. If you do not completely understand the programming and software development principles covered in this sequence, your chances for success in the program are not good. Therefore, be prepared to study and work hard. There is a lot for you to learn in this sequence. Once some of the basic fundamentals are covered, the pace by which we cover the concepts and amount of work will increase. This is especially true in CS6312.

Therefore, if you find yourself struggling in this course, please be honest with yourself and ask the following questions:

- Do I have the time available to dedicate to this course and an online CS program?
- Am I utilizing the assigned readings and videos to comprehend the material?
NOTE: It may take multiple readings to fully understand the material
- Am I utilizing the help that is available?
- Am I earning a good grade (A's on assignments), but really not fully understanding the material or knowing what I am doing? In other words, am I relying too much on the help to complete the assignments?
- Is an online program a good fit for me?
- Is CS a good fit for me?

If at any point throughout the semester you wish to discuss your progress, please feel free to contact me.

Students are required to contact the instructor prior to the Withdrawal Date to get feedback on (1) their progress in the course and (2) chances of future success in the program. Remember, a 'W' on your transcript is much different than a 'C' or an 'F'.

A class email address has been set up for our class:

cs6311@westga.edu

This gives a number of people (myself, TA's, etc) access to your questions as they come up. The beauty of this is that if one of us isn't around to answer your question, someone else may be and you'll get an answer quicker. As Graduate Students, I'm sure you do not want any of us to just give you the answer. Rather, because you know that Computer Science is a place where you apply past knowledge in a new setting, you will expect us to provide you the tools to figure out the answer on your own.

One thing to keep in mind, when asking questions it is to your benefit to include as much detail as you possibly can. Remember, it may be 12, or even 24 hours before someone reads your email. I'm always disappointed to respond to a student with something like, "I don't really understand what you're asking here. Could you please provide me with more details so I can better help". Often times you are best to try to include at least:

- Your name (I know this sounds silly, but if I just see the email address, it might be tough to know who belongs to the email address lovesToCode@gmail.com)
- The class number. Yes, I appreciate this sounds silly too, but realize that there are multiple people fielding your emails, just include this in the Subject Line to better help us
- Which chapter / page / exercise you are working on. The more specific, the easier it'll be for us to know exactly what's going on
- What you are attempting to get the computer to do
- Any input you are typing in as the user
- What you are expecting to see the computer do in response
- What the computer is actually doing
- Any specific error messages you are receiving (just saying that "I got a error box" doesn't help too much)
- Last, and probably most important, is to be sure to upload the work you have so far to the dropbox in Moodle. I appreciate that you may know exactly which line is causing the problem. However, it makes our lives so much easier to use the computer to troubleshoot on our end. Besides, sometimes errors in one line of code may not show until later in the program

Learning Outcomes:

- Explain what a programming language is and how a program is developed and executed
- Test and debug small (2 – 4 classes) object-oriented programs
- Write simple object-oriented programs that use the following programming constructs:
 - Data members and methods
 - Other class objects
 - Decision statements
 - Repetition statements
 - Lists and collections

Topics:

- Basics of hardware, software, and programming languages
- Data and expressions
- Decision and repetition structures
- Arrays and ArrayLists
- Writing and using classes and objects
- Object-oriented design
- Coding best practices

Required Software:

- Java SE JDK – free download at:
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>
- "Eclipse IDE for Java Developers" – free download at:
<http://www.eclipse.org/downloads/>

Grading:

Final grades will be calculated as a weighted average according to the following:

Discussions	10%
Quizzes	10%
Lab	40%
Midterm Exam	15%
Final Exam	25%

Grading Scale

A >= 90%
B >= 80%
C >= 70%
F < 70%

Late Policy:

No late work will be accepted. Also, because all work will be submitted via Moodle, the due date/time is determined by the server **NOT** your machine. If you are even 1 second late, the links will turn off and you won't be able to submit your work. You are strongly encouraged to submit early and often.

Types of Exercises:

NOTE: The nature of CS is that the material builds upon itself. Therefore you are responsible for all practices/concepts after they are introduced. For example, we teach commenting early but expect you to write comments from there on, regardless of whether the directions explicitly ask for them or not.

REVEL:

Each week there will be a specific reading out of the textbook using the REVEL system. These readings will have a variety of practice exercises embedded within them.

Discussions:

Each week there will be a different discussion question where everyone is expected to participate. Each student will be expected to have an initial response to the discussion question and you are strongly encouraged to offer responses to other students. Grading will be based on the quality of the contribution to the discussion topic.

Quizzes:

Most weeks there will be a quiz over the assigned readings and videos. These Quizzes are independent work and you are expected to work on them by yourself. You may refer to the readings/videos as you do them, but you are not to discuss them with others.

Lab:

Each week you will be given an exercise to complete to help you better understand and practice the material being taught. These exercises are to be individual in nature. Discussing concepts and ideas with others is OK, but at no time should you either receive or give code to anyone else. You should expect at least one lab exercise to be assigned each week.

Midterm Exam / Final Exam:

These are meant to be bigger, closer to 'real-world' applications. They are a chance for you to practice problem solving as you implement concepts we cover in the weekly labs. Projects will be graded on a 100-point scale and will be far more detailed than the lab grading.

Grading Scale:

A	Excellent. Please know that a high grade in one course doesn't necessarily guarantee success in other courses. Students should be able to continue the graduate curriculum by continuing to apply the same level of effort in other courses in the graduate curriculum, but be aware that this material builds on itself – it will get more complex.
B	Good. The student has demonstrated achievement of the course goals with some minor areas for improvement. Realize that future courses will build on all previous materials. The student should expect to apply more effort in other graduate courses in the graduate curriculum. NOTE: Students receiving a 'low B' (just barely enough points to receive a B) should realize that they will need to make a significant change in their approach to graduate school and might seriously reconsider their ability to continue in the program.
C or lower	For those earning a C or lower, CS and/or an online CS program like ours is probably not for you and your chances of success here are not good. We appreciate your efforts for attempting the program.

Important Information:

Students, please carefully review the following information at this link

<https://www.westga.edu/administration/vpaa/common-language-course-syllabi.php>

It contains important material pertaining to your rights and responsibilities in this class. Because these statements are updated as federal, state, university, and accreditation standards change, you should review the information each semester.

Academic Honesty Specific to CS:

All exercises/assignments/tests submitted should be your own work. **A student who engages in any form of academic dishonesty will receive a 0% for the assignment and risks failing the course.** The incident may also be reported to the Office of Student Affairs so that they can determine if further disciplinary action should be taken.

Sharing Ideas:

When I was a graduate student in Computer Science, I had a faculty member tell me that we were all encouraged to share thoughts and ideas. However, if we found that we were talking slow enough for the other person to take notes, then we were cheating. Additionally, if there was *any* sharing of code whatsoever, that was considered cheating.

Although my learning took place prior to email/instant messaging/Google, I think those ideas still apply today. Realize that you are encouraged to share thoughts and ideas, but since you'll be communicating digitally, the other person will have an exact copy of what you said so be careful what you are typing.

"Internet Code":

Additionally, the use of 'Internet code' is strongly discouraged. My experience has been that the folks who typically upload their code to the Internet are also the people who don't take the time to follow the development ideals that we teach in this course. Also, many times Internet code is sloppy and difficult to understand and follow.

Duplicate Code:

Any duplication of code submitted will result in *both* parties being submitted to Office of Student Affairs as plagiarism as it will be nearly impossible for me to tell who gave and who received the code. Be smart; don't take the risk of sharing your code.

If you find yourself uncertain as to whether something you are doing or are being asked to do would violate the Academic Honesty policy, please contact the instructor immediately.