

Syllabus  
COSC 052 - Fall 2012 - Computer Science II  
11:00 pm - 12:15 pm Monday/Wednesday  
ICC 101

**Instructor:** Willis Addison Woods  
Adjunct Assistant Professor  
Department of Computer Science  
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**Office Hours:** Monday/Tuesday/Wednesday 1:30 pm – 3:00 pm  
(or by appointment)

**TAs:** TBD

**Course Description:**

This course surveys advanced topics of C++ programming and introductory data structure concepts. It is intended for computer science majors, minors, and other students with a serious interest in learning C++ programming. The course covers the following topics: program organization, pointers, self-referential classes, dynamic object creation and destruction, linked lists, recursion, inheritance, abstract base classes, virtual functions, polymorphism, template classes, exception handling, C-style arrays, random file access, Big-Oh notation, asymptotic analysis, abstract data types, stacks, queues, dequeues, lists, vectors, sequences, priority queues, binary trees, binary search trees, elementary graphs, searching, and sorting. This course satisfies the college science requirement.

**Prerequisites:**

COSC-051

**Required Text:**

Data Structures and Algorithms, 2<sup>nd</sup> Edition by Michael T. Goodrich,  
Robert Tamassia, and David Mount

**Recommended Text:**

C++ Programming: From Problem Analysis To Program Design, 5<sup>th</sup> Edition  
by D.S. Malik

**Course Objectives:**

- Reinforce basic C++ programming skills
- Learn advanced C++ programming techniques
- Apply programming skills to implement basic data structures
- Explore basic algorithm analysis techniques

**Grading:**

This course includes a total of 1000 points worth of tests, projects, class participation, and other graded work.

Exams (42%): Three exams, 140 points each.

Programming Projects (46%): Five projects, 92 points each.

Homework/Quizzes/Class participation (12%): Regular quizzes and graded homework assignments throughout the course. There are 120 total points in this category. Point value of individual assignments will be determined when assigned.

**Grading Scale:**

<i>Grade</i>	<i>Range</i>
A	94 and up
A-	90-93
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	74-76
C-	70-73
D	61-69
F	60 and below

**Submitting Assignments:** Assignments will be posted on Blackboard. All electronic submission requirements (source code, reports, conclusions, etc.) must be posted to Blackboard prior to the due date and time. Source code should be text files with the appropriate extension. Other file formats will be specified in the project description if applicable. Naming conventions will be specified in the project description. For any other hard copy reports or documents, I prefer pdf files but will accept any Microsoft Office compatible file format.

In addition:

- Unless otherwise specified in the assignment document; all assignments are due before class begins on the due date.
- A 2.5% penalty will be deducted per quarter-hour for any assignment that is submitted late.
- No make-up exams or early exams will be provided.
- If you miss a pop quiz or in-class graded exercise, no make-up will be provided (see below for possible exceptions).
- In general requests for due date extensions will not be considered. If you have a personal or family emergency that affects your schoolwork please notify me immediately. Your notification to me must include contact information for your academic advisor. After discussing your emergency situation with your academic advisor and/or dean's office; I will determine if an accommodation is justified. If you have a medical emergency please notify me immediately. Once the medical situation is under control I will need a copy of a doctor's note to explain any missed class time and/or ability to work on assignments. At that time I will determine if an accommodation is justified. *(Note: Personal emergencies / family emergencies (verified by your academic advisor); and medical issues (with doctor's written verification) will receive consideration. An accommodation for any other reason is highly unlikely.)*

**Programming Environment:** This class is about the use of computer programming to solve problems. You will do a lot of C++ programming. There are a wide variety of development environments that you can use to create C++ programs. I will provide links to some of these options separately. Installation and use of any such third party application is optional, is your responsibility, and will not be covered during class. All graded projects and homework assignments must compile on the computer science server specified for this class (cs-class.uis.georgetown.edu). Before submitting any programming assignment, your source code must be copied to the server and compiled using the GNU C++ compiler provided on that server. Again, there are many different development environments and computer tools that you may use to accomplish this. The simplest option is to create your programs directly on the server using a UNIX text editor. This is perfectly acceptable and eliminates the need to transfer files to the server prior to compiling your program.

**Attendance and Expectations:** Attendance is required. Not attending lectures will have an adverse effect on your class participation score. Further, you will be responsible for everything covered in class even if it is not in the textbook. Class meetings will include pop quizzes and if you miss one of those there will be no makeup. If you need to leave the classroom during a lecture feel free to do so as quietly as possible. Please turn off cell phones or set them to vibrate prior to the start of class.

**Academic Honesty:** I am required to report any suspicion of academic dishonesty to the Honor Council.

Exams must be entirely your own work. During exams, you are not allowed to view any other students work, show any other student your work, or engage in any discussion unless you need to ask **me** to clarify something regarding an exam question. In general exams will be closed book and closed notes unless otherwise specified.

All homework assignments and individual projects must be the result your own effort. You may use outside resources such as research papers and books from the library but any solution techniques taken from outside sources must be properly documented. You are permitted to have general discussions and interactions with other students concerning computing techniques. If you do this, you will be expected to clearly disclose with whom you discussed the method of solution, or to cite the references used. In the case of computer code submissions, these references should be cited in the program comments. Material from web sites should be cited with a url and adequate information to determine what was used from that site.

Note that the phrase *method of solution* means a general discussion of technique or algorithm, such as one would reasonably expect to occur standing in front of a whiteboard. This explicitly precludes the detailed discussion of program code or other assignment products. You are not permitted to discuss the specific details of your solution. You are strictly prohibited from viewing or copying someone else's source code. You are strictly prohibited from allowing someone else to view or copy your source code. You may not email or otherwise provide to someone else the files associated with your programming project or other assignment documents. You may not submit someone else's file or files as your own. Regardless of how much assistance you receive you must complete the assignment yourself and physically type your programs, reports, and all other assignment products on your own.

**Weekly Course Schedule:** Provided separately.

*Course topics, administrative guidelines, and other specifics discussed in this syllabus are subject to change. Notice of any changes will be provided in class.*