CSCI 151 **Intro to Computer Science & Programming** **Spring 2015**

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Catalog Description:

This is a lecture and laboratory course offered to introduce basic concepts of computer science and programming. Topics include information and data representation, hardware, programming methodology, algorithm design, abstract data types, programming languages, operating systems, applications, and communications.

Prerequisite: Students planning to enroll for this course should have mastered computer essentials including interaction with a graphical user interface, text editor, and Web browser. If you prefer to use your own computer rather than university laboratory facilities, it is expected that you can download, install, and configure software. No experience in computer programming is expected or required.

Student Learning Outcomes:

(measured by exam, quiz, lab, and homework assignment results)

1. Show how computer hardware represents information.
2. Describe the computer circuitry that harnesses the electrical flow.
3. Explain how computing components may be combined to build computer systems.
4. Apply general problem-solving strategies to the development of computer algorithms.
5. Write programs C++ to express and implement algorithms to solve problems.
6. Identify and explain the application of abstract data types such as stacks, queues, lists, trees, and graphs.
7. Apply the object-oriented methodology to computer problem solving.

Text: Computer Science Illuminated, **4th edition** by Nell Dale and John Lewis
ISBN 9780763776466
or

Computer Science Illuminated, **5th edition** by Nell Dale and John Lewis
ISBN 9781449672843

A copy of the 4th edition of this book is on reserve in the university library.

Recommended Text:

C++ Programming: From Problem Analysis to Program Design, 6th edition by D.S. Malik
ISBN 9781133626381

Course Policies

Makeups:

If you miss a quiz, that will be the low grade (0 points) which will be dropped. If you know ahead of time that you'll have to miss a quiz, let me know and it may be possible for you to take a quiz outside of class. Taking a quiz *after* the rest of the class does is usually possible only if you take it before the next class period when the graded quizzes will be returned to the class.

Attendance:

You are responsible for everything covered in all class meetings, whether you're in class or not.

Drops:

If you are making an obvious effort in the course at the time you drop (still attending class, attempting program and lab assignments), you may drop passing no matter what your actual grade might be. If you just disappear, your grade will be whatever you have actually earned at the end of the semester (usually a grade of F). If you find that you are unable to complete the course, please be sure to drop the course to avoid receiving an F; you will not be automatically dropped.

eCollege:

This is a ***web-enhanced*** course (using some of the capabilities of eCollege but not set up as a self-directed online course).

You can access eCollege either directly or through your myLeo account.

1. To access eCollege through myLeo, log on to your myLeo account and click on **eCollege** in the bar in the upper right of the screen under the myLeo logo (there may be an additional link available in the menu on the left side of your screen). You can bypass the university's home page by going to

   http://online.tamuc.edu

or To connect to eCollege directly, set your browser to go to **http://online.tamuc.org/**

Enter your student id in the User Id box at the top of the screen where the cursor is blinking and enter your password in the Password box to the right of the User Id box (it's the same id and password that you use when logging in to your myLeo account). Click on **Sign In** .

As long as eCollege itself is up, you can connect to eCollege this way even when myLeo is down or the university's home page is inaccessible.

2. In eCollege click on the **MyCourses** tab (next to **Home**) in the upper left corner of the screen between the university logo and the date.

3. Scroll down to the bottom of the MyCourses screen and click on the class you want from the list of online and web-enhanced courses you may be taking this semester.

eCollege Announcements:

The course home page (the first page once you get into a specific course) contains an **Announcements** box.

There is a file in the Announcements titled **What's Happening in Class** in which you will find information about each class meeting (what's due, what we did today, and what we'll probably be doing for the next class) in case

you missed a class or forgot to write down an assignment. Click on an announcement name (or on the + sign to the left of the name) to open and view the file. The most recent class period will always be at the top of the file, but all previous class periods will remain in the file and can be viewed by scrolling down in the document.

Please be sure to check the eCollege Announcements frequently.

eCollege Document Sharing:

Input data files, sample programs, and most handouts can be downloaded from eCollege. All of these files can be found in the Document Sharing section. Click on **Doc Sharing** in the toolbar at the top of the screen. The files will be organized according to topic; files not associated with a particular topic will be listed under the default category of the course name.

In the **Categories** box, click on the category (folder) you want. Then in the box below (title is the category selected), click on the name of the file to be downloaded. You're given the option of saving the file or opening it directly in its application program (most are Word 2003 files, so the document will be opened in Word) and then saving it if you wish to keep a copy of it.

Compilers: All the computers in the Computer Science labs in Jour 101-102 and 200 have at least three C++ compilers installed: Microsoft Visual C++, Microsoft Visual C++ Express Edition (a more limited but easier-to-use version of Visual C++), and Orwell Dev C++. Any C++ compiler you may have access to is fine for programming assignments for this course.

All of these compilers can be downloaded for free for installation on your own computer:

Orwell DevC++ 5.4.2 – click on the dark green rectangle labeled Download

http://sourceforge.net/projects/orwelldevcpp/

Visual C++ Express Edition 2012:

http://www.microsoft.com/visualstudio/eng/downloads#d-express-windows-desktop

Visual C++ Developer Center (links for how-to videos, tutorials, etc. in addition to downloading):

http://msdn.microsoft.com/en-us/visualc/default.aspx

The entire Visual Studio (of which **Visual C++** and the express edition are a part) is available for free download by students enrolled in computer science courses at A&M Commerce. If you don't already have an account from enrollment in a computer science course in a previous semester, an account for downloading free Microsoft products will be set up for each of you after the 12th class day (when enrollments are stabilized). Instructions for downloading from your account are at the top level in eCollege Doc Sharing

(Instructions for MSDNAA Software Downloads.doc).

For some Visual Studio Tips and Tricks, go to:

http://www.cprogramming.com/visual.html

Some recommendations for a successful semester:

1) **Be here** as often as possible.

2) **Read assignments** and be ready for what we'll be talking about in class.

3) **Ask** if you don't understand something.

4) **Get help** (sooner rather than later) if you have problems:

   - dept lab help in Jour 200
   - free tutors in Mach III (part of the TRIO Programs located in the One-Stop Shop) for those who qualify http://web.tamuc.edu/studentLife/campusServices/trioPrograms/default.aspx
   - make friends with at least one person in class so you can compare notes or check for anything you might have missed
   - get a study group together

5) **Stay caught up** as much as possible.

6) **Get started** on programs so that you have time to get help if you find you need some help.

7) **Do your own work.** Consult with others about problem-solving strategies, but **code it yourself**.

8) What you get out of any class depends to a very large degree on what you're willing to put into it.

   Get in the habit of writing little practice programs to try out new language features as we learn them.

   As you write more programs (even small ones), the process becomes easier, you're much more likely to

   remember how the language works, and you get much better at programming logic (the hardest part

   of computer programming).

9) Know your own limits and don't over-extend yourself any more than necessary.

TENTATIVE COURSE SCHEDULE

The tentative course schedule will be posted in ecollege. Sometimes it is necessary to extend due dates or make changes/correction to assignments. Any changes to the schedule will be announced in ecollege and reflected in the course schedule. Please check ecollege announcements regularly for changes or updates.

University Policies and Announcements

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library
Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc.edu

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment."

(See Student's Guide Handbook, Policies and Procedures, Conduct)

EARLY INTERVENTION FOR FIRST YEAR STUDENTS:

Early intervention for freshmen is designed to communicate the University's interest in their success and a willingness to participate fully to help students accomplish their academic objectives. The university through faculty advisors and mentors will assist students who may be experiencing difficulty to focus on improvement and course completion. This process will allow students to be knowledgeable about their academic progress early in the semester and will provide faculty and staff with useful data for assisting students and enhancing retention. Grade reports will be mailed by the end of the sixth week of the semester.

All students should be aware that plagiarism is a serious offense. This is true not only of written essays but also of work written in computer languages such as C++. Copying code for assignments from other students or the internet is not allowed. You may certainly discuss with one another the general aspects of programming assignments (like "what does this requirement mean?") and strategies for coding solutions for these assignments, but you must write the actual code for the programming assignments on your own.