Thomas L. Brown
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CS 151: Introduction to Computer Science and Programming

Fall 2012

Course Description:

This is a lecture and laboratory course offered to introduce 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.

Audience:

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 the use of a personal computer is preferred over university laboratory computers, it is expected that the student can download, install and configure software.

Student Learning Outcomes:*

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 computer programs 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.
8. Explain the role of an operating system in managing and interacting with computer system components including main and secondary memory.
9. Utilize information system software to organize, manipulate, and secure data.
10. Describe ways computer networks are used to communicate and share resources and facilitate Web processing.

* measured by exam, quiz, lab and homework assignment results

References and Materials:

Dale, Nell and John Lewis. Computer Science Illuminated, 4ed. Sudbury, MA: Jones and Bartlett Publishers, 2011. (ISBN 978-0-7637-7646-6). (To conserve funds consider an eBook or alternative textbook source.)

FireFox browser and Notepad++ editor available in the CSci lab and as free downloads from http://www.mozilla.com and http://www.notepad-plus-plus.org

Optionally, a usb flash drive to store files and documents.

Measurement and Evaluation:

Grades will be based upon points earned on exams, homework and laboratory assignments. There will be two exams at 100 points each, four quizzes at 25 points each, and ten lab assignments at 10 points each. A point total in the range of 360 to 400 will earn the grade of "A", 320-359 a "B", 280-319 a "C" and so on. College policy should be followed to obtain a grade of "X" (Incomplete). Unless circumstances warrant, the student is expected to withdraw instead of delaying completion of the course by obtaining an "X".

Mon & Wed 9:30 -10:45 (151.004) Journalism 200
Tue & Thu 9:30 – 10:45(.003)

Class Policy, Procedure and Rules

Assigned Readings:

The student is expected to read assignments to prepare for scheduled discussions of the material.

Attendance:

The student is expected to attend orientation classes, the exam meetings, and scheduled project presentations. Regular class and/or online participation should ensure that expectations are understood, and provide feedback to monitor and assess progress. The student is responsible for accessing the course website to obtain assignments and related materials.

Participation:

The student is expected to attend all classes. Regular and punctual attendance should ensure that expectations are understood, and give feedback to monitor and assess progress. If an absence is anticipated, the student should notify the instructor in advance. If absent, the student is responsible for obtaining assignments and related materials. Accruing four or more unexcused absences may result in an administrative drop.

Lab assignments:

It is expected that the student will begin each project when assigned and is expected to complete each graded activity by the scheduled time. These activities are based upon learning objectives to achieve.

Exams:

The student is expected to complete each exam at the scheduled time. If an exam is missed, the next exam score will be substituted. Exams are based upon all learning objectives to be reached before the scheduled date.

Intellectual Honesty:

By departmental policy, the discovery of plagiarism (i.e. copying from another's exam paper or lab project) will result in a grade of "F" on that submission for an individual grade. A subsequent breach of this policy mandates a grade of "F" for the course.

Conduct:

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

Special Accomodations:

Students in need of accomodations for disabilities should contact the Director of Disability Resources and Services, Gee Library, Room 132, phone 903.886.5150 or 5835.