CS160 Orientation to Computer Science

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Instructor

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Office Hours: M/W 11:30–12:20, Tu/Th 9:00–9:50, or by appointment

Course Description

CS160 introduces the field of computer science and programming. It covers binary encoding of data, logic, computer organization, operating systems, programming languages, algorithms, software engineering, and data and file organization.

Prerequisites

MTH60 Introduction to Algebra with a C or better

Recommended concurrent registration in Math 65 and CS 120

Outcomes

Upon completion of the course you will be able to:

- Perform conversions between binary, decimal and hexadecimal number systems.
- Demonstrate an understanding of the differences between data types.
- Write and interpret short machine code instructions to perform simple arithmetic computations, including conversion to a negative in two's complement to perform subtraction.
- Describe algorithms in pseudo-code and implement an algorithm to solve a problem in a programming language.
- Demonstrate an understanding of the concept of abstraction and describe the difference between syntax and semantics.
- Summarize the duties and functions of an operating system.

Required Text

Computer Science: An Overview, Brookshear and Brylow; digital access

Required Materials

USB thumb drive with a minimum capacity of 4GB.

Internet access.

Class Policies

A “normal” class generally asks you to read pages from your textbook(s), then attend a lecture where your instructor covers that same material before giving you an assignment that you are expected to complete on your own time. This class will be different, utilizing a *flipped classroom* approach to learning. Instead of the traditional model above you will still be given reading assignments to do outside of class, however class time will be devoted to working on various projects to reinforce what you have learned. Instead of hours of lecture your instructor will facilitate your work as you do it in class.

This model of instruction means that it is imperative you complete all reading assignments that are given *before* class. Every class period will start with a short quiz over the material you read outside of class to gauge how well the class as a whole understood it. Further discussion or demonstration will be given for any material that needs it followed by an assignment which you will begin working on, in class, while you have access to both your instructor and your peers. Some of these assignments will be individual, some will be small group, all will be collaborative.

Because of the nature of the course you will get the most from it only if you attend every day. Class discussions will likely diverge into material not found in the assigned reading or viewing. Additionally, a lot of your learning will involve class discussion which can only happen if you are present.

All work, unless specifically stated otherwise, is to be submitted electronically. Details of how to do this will be covered in class.

Students come from many different backgrounds and have unique life experiences which can enhance class discussions. For this reason, it is crucial for students to share their insights on course-related topics.

While in class, please set your cell phone to vibrate. If you need to take a call, please step out of the room to do so.

Assignments

All assignments are to be submitted by midnight on the assignment’s due date.

Late assignments will not be accepted. No exceptions.

Assignments may not be submitted via e-mail.

Written assignments must be word processed and spell- and grammar-checked.

Quizzes

Quizzes will be given every week except for weeks 1, 9 & 10.

The lowest quiz score will be dropped.

Exams

No midterm or final exams will be given. Instead, students will complete the two projects below.

Programming & Robotics Project

Further details and guidelines for these assignments will be given later in the course.

Missed Work

In case of absence from class, students are responsible for announcements made and materials covered. If an absence results in a missed quiz, that quiz will be treated as the low score which is discarded when total points are calculated at the end of the term.

Collaborative Work

As students, you are encouraged to discuss assignments and course materials with your peers. However, unless the assignment is a group project, the work you turn in to be graded must be yours and yours alone and you must be capable of explaining it verbally to the instructor if asked. If you received pointers or guidance from another student in the class you must clearly state that near the top of the assignment and list the names of everyone who helped.

Work that appears to be directly copied from another student will not be given credit.

Tutors

Tutors are generally available for this and other computer science classes. Check with the instructor and/or the Learning Center if you feel you need further assistance with this course.

Assessment

Grades will be determined according to the following schedule:

Type	Weight
Homework	30%
Quizzes	30%
Programming Project	20%
Robotics Project	20%

Score	Grade
90 – 100%	A
80 – 89%	B
70 –79%	C
60 –69%	D
< 60%	F

Academic Honesty

As per LBCC Administrative Rule 7030-02 (http://bit.ly/LBCC-AR-7030-02):

> *Students at LBCC are responsible for pursuing their studies with honesty and fairness, and in a manner that respects the rights and dignity of others. Students must not engage in acts of dishonesty. Academic dishonesty includes, but is not limited to, such acts as forgery, changing or misuse of college documents and records of identification, cheating, plagiarism, aiding or abetting cheating or plagiarism, knowingly furnishing false information to the college, violating copyright or trademark, or copying college software.*

It would behoove you to familiarize yourself with this Administrative Rule as well as the Student's Rights, Responsibilities, and Conduct Code, LBCC Administrative Rule 7030-01 (http://bit.ly/LBCC-AR-7030-01), and the associated LBCC Board Policy 7030 (http://bit.ly/LBCC-BP-7030).

LBCC Center for Accessibility Resources

Students who may need accommodations due to documented disabilities, who have medical information which the instructor should know, or who need special arrangements in an emergency should speak with their instructor during the first week of class. If you believe you may need accommodations but are not yet registered with the Center for Accessibility Resources (CFAR), please visit the CFAR Website for steps on how to apply for services or call 541-917-4789.