CS 160
ORIENTATION TO COMPUTER SCIENCE
Fall 2021

INSTRUCTOR: Sisi Virasak
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Office Hours: 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.

CLASS TIME: TR 8-9:50 AM https://linnbenton.zoom.us/j/96307250125 Meeting ID: 963 0725 0125

DISCORD: https://discord.gg/dm98sdbdgm Collaborative tool for students to engage with one another, post questions and answers. Also another tool to reach me directly.

PREREQUISITE: MTH 075 Variables and Linear Equations with a grade of "C" or better. Recommended: Concurrent enrollment in CS 120 Digital Literacy.

TEXT BOOK: **OER textbook provided in Moodle (elearning.linnbenton.edu)**

MATERIALS: Internet access and USB Key/Flash Drive/Thumb Drive.

COURSE OBJECTIVES: On completion of this course, students will be able to:

1) Understand the concept of abstraction.
2) Understand the representation of numbers and perform conversions between the binary, decimal and hexadecimal number systems.
3) Understand the science and role of algorithms in the field of computer science.
4) Write and interpret short machine code expressions.
5) Write algorithms in pseudo code and a programming language to solve given problems
6) Describe in detail the duties and functions of an operating system.
7) Describe basic variable types and data structures
8) Describe the various differences between object oriented and procedural/traditional programming languages.

GRADING: Final grades will be assigned based on the percentages of the weighted total points.

		90%-100% ...A
Assignments & labs	15%	80%-89% ....B
Quizzes	25%	70%-79% C
Project I	30%	60%-69% ....D
Project II	30%	below 60% ..F

The LBCC community is enriched by **diversity**. Each individual has worth and makes contributions to create that diversity at the college. Everyone has the right to think, learn, and work together in an environment of respect, tolerance, and goodwill. (related to board policy #1015)

COURSE REQUIREMENTS:

QUIZZES:

a) Missed quizzes cannot be made-up without instructor consent **PRIOR** to the quiz.
b) The lowest quiz score will be dropped.
c) **NO MIDTERM EXAMS or FINAL EXAM WILL BE GIVEN** - weekly quizzes will take the place of midterms and two individual projects will be given in place of the final.

HOMEWORK:

a) All assignments must be uploaded into Moodle before the due date. All assignments MUST be clearly written or typed. Acceptable file extensions are .doc/.docx or PDF.
b) Assignments will lose 10% for each day being late and ***will not be accepted*** more than one week after the due date.
c) The lowest assignment score will be dropped.
d) Please SHOW YOUR WORK on all mathematical calculations.

HOMEWORK/QUIZZES:

If you know that homework and quiz will not be turned in on time email instructor before due date.

INDEPENDENT WORK:

All students are encouraged to discuss assignments and course materials in general terms with other students. However, each student is expected to work independently on all assignments. The work you turn in to be graded must be *your own* work. If you need help with exercises, see the instructor for further assistance and guidance. The penalty for turning in work done by another student will range from a 0 grade on the assignment to a failing grade in the course.

TUTORS:

Tutors are usually 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.

OFFICE of DISABILITY SERVICES:

Students who may need accommodations due to documented disabilities must **speak with the instructor during the first week of class**. If you have not accessed services and think you may need them, **please contact Disability Services, 541-917-4789**. If you have documented your disability, remember that you must complete a Request for Accommodations form every term in order to receive accommodations.

STUDENT RIGHTS & RESPONSIBILITIES:
All students are expected to be familiar with the Student Rights and Responsibilites handbook, and to follow the conduct guidelines outlined. The handbook can be found on the LBCC Website, under Students/Students Rights.

COURSE OUTLINE AND SCHEDULE

(subject to change during the term)

Week 1	Monday 27 September 2021 – Sunday 03 October 2021
The Evolution of Computers: Contributions and Pioneers of Computing History, Computer Generations Reading: Chapter 0, Chapter 1	
Assignment Due: **#1 – Tuesday 05 October 2021 11:59PM**	**Quiz:** **No Quiz**

Week 2	Monday 04 October 2021– Sunday 10 October 2021
Data Storage: The Binary Number System, Bit Shifting and Rotating, Negative Numbers: Two's Complement and Excess Notation, Binary Fractions, Floating Point Reading: Chapter 1	
Assignment Due: **#2 – Tuesday 12 October 2021 11:59PM**	**Quiz Due:** **#1 – Tuesday 12 October 2021 11:59PM**

Week 3	Monday 11 October 2021– Sunday 17 October 2021
Data Storage (continued): Hexadecimal Number System, Mass Storage Reading: Chapter 1, Chapter 2	
Assignment Due: **#3 – Tuesday 19 October 2021 11:59PM**	**Quiz Due:** **#2 – Tuesday 19 October 2021 11:59PM**

Week 4	Monday 18 October 2021 – Sunday 24 October 2021
Machine Language: Machine Language, CPU Architecture, The Instruction Cycle, Machine Instructions, Programs and Data Lab #1	
Reading: Chapter 2	
Assignment Due: **#4 – Tuesday 26 October 2021 11:59PM**	**Quiz Due:** **#3 – Tuesday 26 October 2021 11:59PM**

Week 5	Monday 25 October 2021– Sunday 31 October 2021
Operating Systems: History of Operating Systems, Components of an Operating System, File Systems, Security Lab #2	
Reading: Chapter 3, Chapter 4	
Assignment Due: **#5 – Tuesday 02 November 2021 11:59PM** **Lab #1 – Tuesday 02 November 2021 11:59PM**	**Quiz Due:** **#4 – Tuesday 02 November 2021 11:59PM**

Week 6	Monday 01 November 2021– Sunday 07 November 2021
Algorithms: Representation of Algorithms, Algorithmic Structures, Algorithm Efficiency, Big-O Notation	
Reading: Chapter 4, Chapter 5	
Assignment Due: **#6 – Tuesday 09 November 2021 11:59PM** **Lab #2 – Tuesday 09 November 2021 11:59PM**	**Quiz Due:** **#5 – Tuesday 09 November 2021 11:59PM**

Week 7	Monday 08 November 2021– Sunday 14 November 2021
Introduction to Python: Intro to Python, Hello World!, Basic Arithmetic and Strings, Variables, Booleans, The If-Else Statement and Conditions, The While Loop, Functions Reading: Chapter 6 Project I: Python Programming	
Assignment Due: **#7 – Tuesday 16 November 2021 11:59PM**	**Quiz Due:** **#6 – Tuesday 16 November 2021 11:59PM**

Week 8	Monday 15 November 2021– Sunday 21 November 2021
Software Engineering: Software Development and Product Life Cycle, Documentation, Software Licensing	
Reading: Chapter 7	
Assignment Due: **#8 – Tuesday 23 November 2021 11:59PM**	**Quiz Due:** **#7 – Tuesday 23 November 2021 11:59PM**

Week 9	Monday 22 November 2021 – Sunday 28 November 2021
Project II: Can you read code? Find and explain the errors.	
Assignment Due: **#9 – Tuesday 30 November 2021 11:59PM** **Project I: Python Programming – Tuesday 30 November 2021 11:59PM**	**Quiz Due:** **#8 – Tuesday 30 November 2021 11:59PM**

Week 10	Monday 29 November 2021-Sunday 05 December 2021
Project II: Can you read code? Find and explain the errors.	
Assignment Due: **None**	**Quiz Due:** **None**
Project II Due: **Tuesday 07 December 2021 11:59 PM**	

Important Dates:

First Day of Fall Term	September 27
Last Day to Add/Drop	October 4
Last Day to Charge to Financial Aid	October 4
Payment Due Date-Transcript Hold Applied if not Paid in Full	October 8
Last Day to Charge to Agency	November 5
Veterans Day, School Closed	November 11
Last Day to Withdraw with "W"	November 14
Thanksgiving Observed, School Closed	November 25-26
Balance Due in Full to Avoid Late Fees and Registration Hold	November 29
Last Day of Fall Term	December 10