Sisi Virasak
CS161 – Introduction to Computer Science
Winter 2020 Syllabus

Email: virasas@linnbenton.edu	**Class Room:** MKH-101
Office: MKH-108	**Class Day/Time:** MW 12-1:20 PM **Lab Time:** F 12-1:50 PM
Phone: 541-917-4617	**Office Hours:** MW 1-3 PM, TR 1-3 PM

Course Description and Objectives:

As the name implies, CS 161 is the computer science department's introductory course. While it is the first course in the programming sequence for majors it is appropriate for non-majors and it does NOT assume that you have programming experience.

This course has two primary goals:

- First, to introduce the general field of computer science. We hope that you will leave this course with a sense of what computer science is and what computer scientists do.
- Second, to introduce the concept of programming. Programming is the way that computer scientists express their ideas and implement solutions to problems. Even if you never "program for a living", you will need to know how to program in order to appreciate the ideas you learn and to work in the industry.

Prerequisites

• CS160 Orientation to Computer Science, with a 'C' or better
• MTH95 Intermediate Algebra or equivalent with a 'C' or better

Required Materials:

- *The Practice of Computing Using Python, 2nd edition*, by William Punch and Richard Enbody. ISBN-13: 978-0132805575. (Provided in Moodle)
- Will be using Moodle in this course. You are not required to visit your Moodle shell before our first class, but please make sure that you are able to log in to identity.linnbenton.edu. Before logging in for the first time, you will have to claim your account, also at identity.linnbenton.edu. If you have any problems claiming your account or logging into Moodle, please let the Student Help Desk know (541-917-4630, student.helpdesk@linnbenton.edu).
- Python 3.6+ (https://www.python.org/). A well-written guide for installing Python on Windows, Mac, and Linux can be found at https://realpython.com/installing-python/.
- A text editor of your choice. Thonny (https://thonny.org/) is an excellent beginner's editor for Python. Visual Studio Code (https://code.visualstudio.com/) is installed on the classroom computers. Other good, Python-oriented options include PyCharm

(https://www.jetbrains.com/pycharm/, available with a free license for students) and Spyder (https://www.spyder-ide.org/).

- A GitHub account.
- A USB thumb drive with a minimum capacity of 4GB.
- Internet access.

Learner Outcomes:

While a major goal of this course is to provide a good start to the development of programming skills, the course is not solely about programming. Upon successful completion of the course students should have gained the following skills and proficiencies:

- Demonstrate an understanding of the difference between primitive data types and objects and their representation using an object-oriented approach.
- Demonstrate the use of good program development, debugging techniques and documentation. Write object-oriented code that includes control statements, while loops, for loops, output to the screen and input from the keyboard and from a file.
- Write, compile and run simple web-based and desktop-based GUI applications using components and containers.
- Write simple, user-designed classes that demonstrate an understanding of encapsulation.
- Write object-oriented code that includes the use of single-dimensional arrays.

Additionally, you should develop skills and understanding that will ultimately allow you to analyze complex problems and apply your knowledge and experience to developing good solutions to them. Programming is a creative process. However, to exercise that creativity, one must learn basic tools and principles. That is the purpose of this course.

Course Structure and Grading Policies

Grade Determination

The final grade you earn in this course will be based on the points accumulated over the activities as described below.

Grades Table:

Assignments/Exams	Weight
Programming Assignments	25%
Labs	25%
Midterm Exam	20%
Final Project	30%
TOTAL	100%

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Grades: **IMPORTANT:** A grade of "C" or higher is considered passing.	A: 90-100% B: 80-89% C: 70-79% D: 60-69% F: < 60% P: >= 70% NP: < 70%

In-lab work

Lab is designed to be a time to allow you to learn new skills, apply and practice existing skills, and prepare yourself for the upcoming lectures and programming assignment. Points for these activities will be assigned based on level of difficulty for each activity and will be awarded for successful completion and/or effort.

Programming Assignments

Programming assignments are designed to take what you have learned in lab and during lecture and apply these skills to a program on a scale larger than that explored in-lab. It is expected that you will complete all assignments as an individual unless otherwise instructed. If you have questions concerning an assignment, feel free to consult an instructor, come to office hours, or consult a tutor.

All assignments are due at their assigned date and time. In order to receive partial credit, always submit your best effort by the assignment due date.

Late submission policy:

Assignments submitted late will be penalized, at a rate of 2 penalty points per hour. The submission time will be the time shown on the Moodle submission system. Any assignment submitted more than 50 hours late will receive no credit. Exceptions will only be made for documented emergencies, in strict adherence to LBCC policy. Computer/network crashes are NOT an acceptable excuse for late submissions. To avoid problems with such crashes and last-minute problems, students are encouraged to submit early. You can always revise your submission till the deadline.

Class Website:

Most course materials will be made available on the course web page during the term. You are responsible for checking this site frequently for reading assignments, prep activities, lecture notes, announcements and supplemental class materials.

We **highly** suggest using your own desktop or laptop to complete your assignments, so you aren't constrained by the open hours of the labs.

Working on your own laptop/computer: You are encouraged to work on your own laptop or computer. Having your own computer will greatly aid you in the computer science major, and the computer/laptop itself does not have to be very expensive. The class software is free and will work with Windows, OSX, and Linux. Python and IDLE are easily downloaded from www.python.org. You should download the latest edition of version 3 (NOT version 2).

Whether you work in the labs or from home, you will need to have Internet access to submit your assignments.

Guidelines for Communication

The best way to reach your instructor is by email. I check my email regularly throughout the day and your message will receive a prompt reply. While they need not be strictly formal your emails should be concise, list necessary details (course name/number), and written in a manner that would be appropriate for communicating with your boss.

Academic Honesty:

Helping, or being helped by, another student during an exam will be considered a breach of academic honesty and is grounds for receiving a zero grade and/or failing the course among other possible remedies.

Classroom Conduct:

1) Please silence cell phones and do not use during class.
2) Please respect the learning environment of others and keep distractions to a minimum.

Basic Needs:

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Roadrunner Resource Center for support via email at resources@linnbenton.edu or visit us on the web at www.linnbenton.edu/RRC. Our office can help students get connected to resources to help. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to provide any resources that they may possess.

LBCC Center for Accessibility Resources:

Students who may need accommodations due to documented disabilities, or who have medical information which the instructor should know, or who need special arrangements in an emergency, should speak with the instructor during the first week of class. If you believe you

may need accommodations, but are not yet registered with CFAR, please go to http://linnbenton.edu/cfar for steps on how to apply for services or call 541-917-4789.

LBCC Comprehensive Statement of Nondiscrimination:

LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws.

LBCC Statement of Inclusion:

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).

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Week	Activity	Due
Week-1 Jan 6	Welcome, introductions, syllabus, Moodle, scope & set clear expectations Topics: What is CS?, Why Python?, Operations, Functions Reading Assignment: 0.1-0.5, 1.1-1.5, 1.6-1.10 **Programming Assignment #1** **Lab #1**	Jan 12 @ 11:55 pm
Week-2 Jan 13	Topics: Conditional statements, loops Reading Assignment: 2.1,2.2.1-2.2.9 **Programming Assignment #2** **Lab #2**	Jan 19 @ 11:55 pm
Week-3 Jan 20	****Jan 20 No class – Martin Luther King Jr. Day**** Topics: read-eval-print loops, what makes for a good program Reading Assignment: 2.2.10-2.3, 3.1-3.5 **Programming Assignment #3** **Lab #3**	Jan 26 @ 11:55 pm
Week-4 Jan 27	Topics: strings: working with text, iterating over strings Reading Assignment: 4.1-4.3, 4.4-4.8 **Programming Assignment #4** **Lab #4**	Feb 2 @ 11:55 pm
Week-5 Feb 3	Topics: files and exceptions, functional abstraction Reading Assignment: 5.1–5.7, 6.1–6.4 **Programming Assignment #5** **Lab #5** **Review for Midterm Exam** **Final Project Overview**	Feb 9 @ 11:55 pm
Week-6 Feb 10	Topics: lists and mutable data, tuples (and more lists) Reading Assignment: 7.1-7.3, 7.4-7.6 **Programming Assignment #6** **Lab #6** **Feb 12 – Midterm (in class)**	Feb 16 @ 11:55 pm
Week-7 Feb 17	****Feb 17 No class – President's Day**** Topics: dictionaries, sets Reading Assignment: 9.1-9.3,9.4-9.5 **Programming Assignment #7** **Lab #7**	Feb 23 @ 11:55 pm
Week-8 Feb 24	Topics: recursion Reading Assignment: 16.1-16.5 **Programming Assignment #8** **Lab #8**	Mar 1 @ 11:55 pm

Week-9 Mar 2	Topics: objects and classes, encapsulation and inheritance Reading Assignment: 11.1-11.4, 12.1-12.6 **Programming Assignment #9** **Lab #9**	Mar 8 @ 11:55 pm
Week-10 Mar 9	Review and Reflection Work on Final Project **Final Project Due Sunday March 15**	