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| **CSC181 – SCRIPTING AND AUTOMATION** |
| **3 QUARTER CREDIT HOURS**  **Winter 2022, Sprint 2**  **ROOM: 302**  **SECTION: Tuesdays, Thursdays 5:00 – 7:50 PM** |

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| **I. INSTRUCTOR INFORMATION** | |
| **Instructor:** | Vincent La |
| **Email:** | vla@neumont.edu |
| **Office Hours:** | Room 302; Tuesdays (after class until 8:30 PM) |

**II. COURSE DESCRIPTION**

This course focuses on rapid development of basic applications to solve specific problems using scripting languages. Students will explore the benefits automation through code. The goal of the course is to provide students with additional tools for handling and simplifying tedious or repetitive tasks they may deal with throughout their career in the tech industry.

**Prerequisites:**

*None*

**III. COURSE OBJECTIVES**

By the end of this course, students will:

* Understand and explain the strengths and weaknesses of Python as a programming language
* Effectively utilize common data structures including dictionaries, lists, sets, and tuples
* Develop and debug cross-platform applications using Python
* Collect and utilize online data
* Generate, read, and manipulate data
* Create a variety of automated processes which are made easier through Python’s extensive collection of libraries
* Build interactive applications with a graphical user interface (GUI)

**IV. INSTRUCTION METHODS**

The daily class time is divided among formal lectures, discussions, demonstrations, exercises, group work, individual work, and several engaging activities. It is expected that each student will take notes, work problems, and participate in exercises during class. Problem solving skills will be honed as well.

Students can expect to spend approximately 60 hours of work outside the classroom.

**V. TEXTBOOK**

*None but some assignments may require the use of Pluralsight or the EBSCO library resources available online.*

**VI. COURSE OUTLINE**

**Grading Scheme:**

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| **Assignment** | **Weight of Grade** |
| Projects | 100% |
| **Total** | **100%** |

In addition, I am encouraging active class participation in this course. During class, I will call on students randomly to perform interactive exercises (e.g. Whiteboard coding). My hope is that such interactive exercises improves learning outcomes and also prepares you for [interviews](https://coderpad.io/blog/whiteboard-interview-guide/) you may have in the future. As an incentive, I will offer up to 3 percentage points of extra credit (essentially this can bump you up a grade, e.g. B to B+ or B+ to A-) for active class participation. Class participation will be tracked, but note that perfect responses are not required to obtain “full credit”. The purpose of this is to increase engagement, and as long as the student tries their best, they will receive credit. Really, the only way a student will not get credit is if they do not attend the class or put in minimal effort when called upon.

**Assignments Overview:**

Projects

These hands-on research and programming assignments give students an opportunity to apply the theories and techniques discussed in class.

**Collaboration Policy:**

Although it is useful to discuss possible solutions with others, it is critical that everyone do their own work so they can come to a full understanding of course topics. All students are responsible for doing each assignment on their own (unless the assignment is specifically given as group work). You may not share solutions or source code in any way, including (but not limited to) the following examples:

* Doing an assignment or lab with one or more other students, discussing each aspect of the solution together as you write/type it up
* Writing code for another student to submit or submitting code that you did not write
* Copying another’s work or allowing your work to be copied by anyone else, either electronically, printed out, or manually
* Showing a completed solution to another student in order to help him/her complete it
* In short, do not explain exactly how to code something to another student, do not show your code to another student, do not give your code to another student, do not code for another student.

The preceding list is not exhaustive; if you have questions about whether or not something is cheating, ask the instructor. Any student found to be engaging in excessive collaboration will be reported to Neumont Student Affairs for judicial action.

Students seeking assistance or guidance from anyone other than the instructor, including other faculty, will carbon copy and/or notify the instructor on all such communications. The instructor reserves the right to limit the amount of assistance a student receives from others.

**Participation, Late Assignment & Make-up Work Policy**:

It is crucial that you understand the material being covered in class before moving on to new topics. To encourage practical experience with class topics in a timely manner, all deliverables will be penalized by 15% of the total points possible each class day they are late, starting the minute they are due (excused absences, weekends, and college holidays excepted). Exercises will not normally be accepted late. No submissions will be accepted late after the last class period begins (usually when the final exam is given).

Once the class begins a quiz or exam, late students may only take it if no other students have finished the test or left the classroom. Students starting a quiz or exam late will not be given extra time to complete it. Students who miss a quiz or exam due to unexcused absence/tardiness will be given a zero.

Excused absences are granted at the sole discretion of the instructor. They are normally only given in extreme cases of documented illness or personal emergency. No absence will be excused that is not a bona fide emergency, including (but not limited to) family reunions, weddings (your own or somebody else’s), transportation problems, or illness not treated by a doctor. You may be asked to provide documentation or other proof that your absence is legitimate. When possible, you are required to notify your instructor before missing an assignment, quiz, or test. When granted, make-up quizzes and exams will be altered from the original format by the instructor to ensure the integrity of the assessment. The instructor will proctor make-up assessments at his convenience.

**Tentative Course Schedule:**

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| **Date** | **Overview** | **Assignment** |
| 2/8  (Hours: 1-3) | Basics of Python, strings, lists, dictionaries | Assignment #1 “A Year to Remember”  **Open: 2/8**  **Due: 2/14 11:59 PM** |
| 2/10  (Hours: 4-6) | More Basics, tuples, sets, importing libraries, conditionals, loops, input/try/catch |
| 2/15  (Hours: 7-9) | Modules, import, from, alias, Command Line Arguments (CLA), File/IO, Functions | Assignment #2 “DB Part 1 Data at Your Command”  **Open: 2/15**  **Due :2/16 11:59 PM** |
| 2/17  (Hours: 10-12) | global, recursion, Classes | Assignment #3 “DB Part 2 Data at Your Command”  **Open: 2/17**  **Due: 2/23 11:59 PM** |
| 2/22  (Hours: 13-15) | JSON and File I/O, CSV and File I/O, Roll your own CLI |
| 2/24  (Hours: 16-18) | Executables, PIL Images | Assignment #4: “Can’t Put My Finger on What’s Wrong With These Pictures”  **Open: 2/24**  **Due: 2/28 11:59 PM** |
| 3/1  (Hours: 19-21) | GUIs | Assignment #5: “Remember that GUI Year”  **Open: 3/1**  **Due: 3/2 11:59 PM** |
| 3/3  (Hours: 22-24) | Scrapers, HTML/CSS | Assignment #6: “Getting into a Scrape at Neumont”  Open: 3/3  Due: 3/7 11:59 PM |
| 3/8  (Hours: 25-27) | APIs | Final Assignment: “Finally you may Choose”  **Open: 3/8**  **Due: 3/11 11:59 PM** |
| 3/10  (Hours: 28-30) | Final Project |

**This class meets twice a week and a new lab will be assigned according to the class schedule above.** If there is a change in the schedule, the syllabus will be updated in LMS.

**VII. CLASSROOM PARTICIPATION**

To reduce distractions in the classroom during class discussion time, students should not participate in disruptive activities. Students engaged in disruptive activities will be penalized according to the following rubric:

* 1st Offence: A 5% reduction of the final grade
* 2nd Offence: An additional 15% grade reduction
* 3rd Offence: An additional 25% grade reduction, a failing grade in the course, and expulsion from class.

To start, there will not be a strict “laptop down time” enforced. I understand that many students may take notes on their laptops or will try out code simultaneously with the lecture. I trust that students will be respectful of their peers and not engage in disruptive activities that adversely affects the learning experience of others in the class. Examples of disruptive activites include, but are not limited to:

* Playing/Viewing Games or Media. “Games” includes computer games, card games, internet games, cell phone games, or any other kind of game. “Media” includes any media viewed on your laptop, phone, or any other device.
* Instant messaging, cell phones, email, or web surfing not related to the class.
* Doing work not related to the class, including work for your employer, other classes, projects, etc.
* Anything that is distracting to the learning environment, such as talking out of turn, playing music, leaving and entering the classroom, etc.

If students abuse this policy and repeated violations are found, I reserve the right to enforce strict “laptop down” requirements. Any violations of the classroom participation policy may also be reported to Student Affairs and/or the Dean of Academics for judicial action. Infractions may be reported by any Neumont faculty or staff member.

**VIII. GRADING PROCEDURES**

Grades will be assigned as follows. Fractional percentages are rounded to the nearest whole percentage.

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| A | 93% - 100% | B | 83% - 86% | C | 73% - 76% | D | 63% - 66% |
| A- | 90% - 92% | B- | 80% - 82% | C- | 70% - 72% | D- | 60% - 62% |
| B+ | 87% - 89% | C+ | 77% - 79% | D+ | 67% - 69% | F | 0% - 59% |

**IX. ACADEMIC MISCONDUCT**

No cheating, fabrication, plagiarism, or license misuse will be tolerated. According to the Neumont Catalog, academic dishonesty includes, but is not limited to:

* Use of any unauthorized assistance in taking quizzes, tests, or examinations;
* Use of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments, and use of sources either before or during a certification exam that contain unauthorized and/or illegal information;
* The acquisition, without permission, of tests or other academic material belonging to a member of the faculty or staff;
* Engaging in any behavior specifically prohibited by a faculty member in the course syllabus or class discussion;
* Unauthorized file sharing (authorized file sharing guidelines for a class are defined by the instructor); copying work or allowing work to be copied in whole or in part through any means (electronic copy, printed copy, manually-created copy, etc.);
* Collaboration beyond the scope that is allowed by the instructor;
* Using deceit to gain academic credit.

The term “plagiarism” also includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. While students may reference code created by others as a learning tool, they may not copy code in their assignments. Identical or essentially identical submissions of code will be considered the product of academic misconduct (unless the assignment is explicitly defined as a group assignment for which identical submissions are permissible).

Assignments should be considered individual work and be completed entirely on one’s own unless the instructor explicitly permits collaboration.

Academic misconduct also includes submitting a partially complete or complete LMS quiz/exam from any location other than the designated classroom, unless the instructor has given permission to do so. Submitting or resubmitting a quiz/exam after the designated time period will be considered academic misconduct.

Violations of the Academic Honesty Policy typically result in the following sanctions:

**1st Violation:**

* Score of 0 on assessment
* Judicial probation until graduation
* 15 hours of community service

**2nd Violation:**

* Student is removed for all current courses for the remainder of the quarter with failing (F) grades.
* Student must have interview and be cleared by the Provost to be able to return to normal class schedule for the next quarter.
* 20 hours of community service

**3rd Violation:**

* Student is permanently dismissed from school.

**X. ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

Students with diagnosed disabilities may receive appropriate educational accommodations in compliance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973. Information regarding educational accommodations and Disability Support Services at Neumont is located in the Neumont *Handbook for Students with Disabilities*. For more information and/or a copy of the handbook, contact student affairs.

**XI. MISCELLANEA**

This document is subject to change. All policies and procedures may be modified at any time according to college policy and instructor discretion. Please see the instructor if you have any concerns or questions.

**XII. INSTRUCTOR BIO**

Hi! It’s great to meet you all, and I’m excited to have you all in this class. A little about myself: I have a Bachelors in Mathematics and Economics from Dartmouth College and a Masters in Computer Science from Georgia Tech. I primarily have a data science and machine learning experience, but I consider myself a general technologist with experience across industry, academia, non-profits, and federal government. I currently work as a Product Manager with United States Digital Service ([usds.gov](https://www.usds.gov/)). Before that, I was a data science manager at a [research lab](https://reglab.stanford.edu/) out of Stanford University. Before that I spent 5 years at [Clover Health](https://www.cloverhealth.com/en/), a tech startup based out of San Francisco. Outside of class, I enjoy hiking, ultimate frisbee, and playing chess!