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| I. | HCCC Logo-BlackleftsideCourse ID (department & number): CSC-216 DSC-216 |
| II. | Course Name: Python Programming II |
| III. | Number of Credits Awarded for Course: 3 |
| IV. | Prerequisite or Co-requisite courses or academic standing (if applicable): CSC-118 Python Programming |
| V. | Indicate if New or Modified Course: New |
| VI. | Semester and Year Course will First be Offered: Fall 2023 |
| VII. | Name and Telephone Number and/or e-mail address of department chair or other appropriate contact person:  Heather DeVries, Academic Representative to NJ Transfer  [hdevries@hccc.edu](mailto:hdevries@hccc.edu)  201-360-4660 |
| VIII. | Detailed Course Description:  This course is intended for students who have completed the Python Programming course (CSC 118) or have the prerequisite knowledge of the course topics discussed in that class. By the end of this course, students should have a solid understanding of program classes, objects, inheritance, exceptions, file handling, database modules, graphical modules, and numerical analysis modules. Students will explore core libraries that allow programs to access operating system services, manipulate data of many types, interact with the user through graphical user interfaces (GUIs) and crunch out data metrics. Labs will be used to reinforce concepts introduced during lectures. |
| IX | Outline of Course Objectives:  *Upon successful completion of this course, students will be able to*:  1. Create data files and store data in plain text, CSV, and binary files and learned how to use file objects and the CSV and pickle modules and store data in databases.  2. Build lists, tuples, and dictionary to store, add, remove, modify, process, count, reverse, sort, copy, slice, and concatenate data items.  3. Develop programs that handle exceptions to prevent them from crashing.  4. Design object‐oriented programs with Python classes and learn how to encapsulate data.  5. Use inheritance to simplify the design of a program and reduce code duplication.  6. Create python programs to work with SQLite databases to store data in the database.  7. Apply Graphical User Interface (GUI) in Python programs. |
| X. | Texts, Journals and Other Materials used in Course  Required Text:  Muroch's Python for Data Analyst 1st Edition by Scott McCoy  Print ISBN: 9781943872763, 1943872767  e-text ISBN: 9781943872831, 194387283X |
| XI. | Grade Determinants  Two Practical Exams 30% (15% each)  2. Final Exam 30%  3. Lab Activities and Lab Reports 40%  Total 100% |
| XII. | Number of Papers & Examinations  Students will be assigned questions, on various topics, to be researched for the course. In addition, students will be required to write lab reports on topics discussed in class. |
| XIII. | Schedule of Topics to be Covered   |  |  |  |  | | --- | --- | --- | --- | | **Session** | **Topic** | **lab\*** | **SLO** | | 1,2,3 | Create List,Tuples, and Dictionary to store data | Lab 1: Use a list for the test scores program | 1 | | 4,5 | How to work with file I/O | Lab 2: Create a CSV file for trip data | 1,2 | | **6** | **Exam 1** | | | | 7 | Handling exceptions and errors | Lab 3: Enhance the movie list 2.0 program | 3 | | 8,9 | Object Oriented Programming | Lab 4: Enhance the dice roller program | 4 | | **10** | **Exam 2** | | | | 11 | Inheritance | Lab 5: Enhance the product viewer program | 4, 5 | | 12,13 | Python and SQL Database | Lab 6: Review a SQL Database and test some SQL statements | 6 | | 14 | Graphical User Interface | Lab 7 | 7 | | **15** | **Final Exam** | | | |