**Passaic County Community College**
**Academic Year: 2023-2024**
**Standard Syllabus**

**Department Chair: Merrill Siegel**

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**Course Code:** CIS 108 **Course Title:** Programming Fundamentals

**Department:** CIS / Information Technology **Semesters Offered:** Fall, Spring

**Course Description:** This course introduces the students to the core of programming basics. Topics include data types, control structures, algorithm development, and program design with functions-via the Python programming language. It discusses the fundamental principles of Object-Oriented Programming, as well as in-depth data and information processing techniques. Students will analyze, design and solve problems. They will explore real-world software development challenges and create practical and contemporary applications.

**Prerequisites:** MA 025 or MA 025B

**Credits:** 3 **Lecture Hours:** 3 **Lab/Studio Hours:** **0** **Clinical/Fieldwork Hours:** 0

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**Required Textbook/Materials**: "Introduction to Programming using Python; Y. Daniel Liang; Prentice Hall, Pearson Education, 2013. ISBN-13: 978-0-13-274718-9.

**Reference:** the python language reference manual in the python.org web site.

**Notes:**
This course is a pre-requisite for CIS 160 and CIS 165. You must pass this course with a "C" or better to proceed to those courses.

**Special Facilities/Equipment:**

Hardware: WinTel Platform PC or laptop.
Software: Python Interpreter, current edition (open source from python.org).
Storage Media: At least 1 GB Flash Drive for saving lab work.

**Additional Time and Supplemental Requirements:**

- Based on a 15 week semester, students are expected to complete approximately 6 hours per week of assigned work outside of class.

- All assigned projects are completed out of class time. Students, who don't have a computer, can use the open lab to complete homework assignments. Students must read and enforce what they learned outside of the class.

**Course Learning Outcomes**:

Upon completion of this course, students will be able to:

1. Design structured solutions to solve problems using algorithms.
2. Use selection statements to make programming decisions
3. Implement various looping techniques to achieve efficient repetition.
4. Implement data structures such as Strings, Lists, and Dictionaries to support specifications.
5. Utilize Function Definitions in implementing objects of classes.
6. Document applications, internally and externally.
7. Exploit Graphics and Image Processing in problem solving.
8. Explore GUI environment and its use in application development.

**General Education Outcomes:** This is not a general education course.

**Grading Standards:**

| Activity | Contribution |
|---|---|
| Lab Projects (4 – 6) | 30% |
| Tests/ Quizzes | 35% |
| Final Exam | 30% |
| Attendance/Activities/Etc. | 5% |

**Course Content:** (Schedule and suggested topics, readings, and assignments subject to change based on instructor and instructional resource)

| WEEK | TOPIC | Chapter |
|---|---|---|
| 1 | **Introduction to Programming and Python:** | 1 |
| 2 | **Software Development, Data Types, and Expressions** | 1 + 2 |
| | ***The programming process:*** | |
| 3 | ***Elementary Programming:*** | ***2*** |
| 4 | ***Mathematical Functions, Strings, and Objects:*** | ***3*** |
| | **Control Statements:** | |
| 5 | **Making Decisions and working with Strings:** | 4 |
| 6 | **Making Decisions and working with Strings:** | 4 |

| | | |
|---|---|---|
| 7 | **loops:** | 5 |
| 8 | Introduction to Loops:<br>(other loop variations), the break and continue | 5 |
| 9 | the **for** loops, nested loops | 5 |
| 10 | **Design with functions:** | 6 |
| 11 | **More on Strings:** | 8 |
| 12 | **lists:** | 10 |
| 13 | **strings and lists conversions and extractions** | 8 + 10 |
| 14 | **Text files:** | 13 |
| 15 | **Final Exam** **(Final project is Due)** | |

**Make-Up Exam Policy:**

- Make-up exams will be permitted only under extenuating circumstances and only with prior notification and original documentation.
- Exams cannot be made-up after the exam date has passed.
- The instructor reserves the right to create alternate make-up exams

**College Policies:**

For Information regarding:

- PCCC's Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the PCCC Student Handbook and PCCC Catalog

**Panther Alert:**

The College will announce delayed openings, closings, and other emergency situations through the Panther Alert System. Students are encouraged to sign up for Panther Alert Notifications by logging into their student accounts through the PCCC website at www.pccc.edu and following Panther Alert System instructions.

**Notification for Students with Learnings Disabilities:**

If you have a disability, and believe you need accommodations in this class, please contact the Office of Accessibility Services at 973-684-6395, or email ods@pccc.edu. You should do so as soon as possible at the start of each semester. If you require testing accommodations, you must remind me (the instructor) one week in advance of each test.