

COURSE SYLLABUS

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| Course Title: | Programming Logic & Design with Python | | Date submitted: | April 2021 (AAC: 21-14) |
| Department: | STEAM | | | |
| Curriculum: | CIS | | | |
| Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system. | Course Code: (eg. ACC 101) | CSC*124 | Prerequisites: | |
| | Course Type: | Z/D | None | |
| | A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: Internship M: Seminar P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/Clinical/Lab Z: Combined Lecture/Studio | | | |
| | Elective Type: | G | | |
| | AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science | | | |
| | Credit Hours: | 3 | Corequisites: | |
| | Developmental: (yes/no) | No | None | |
| | Contact Hours: | Lecture: 2 Clinical: 0 Lab: 1 Studio: 0 Other: 0 TOTAL: 3 | | |
| | Class Maximum: | 24 | Other Requirements: | |
| | Semesters Offered: | F | None | |
| Catalog Course Description: | This course provides an introduction to the Python programming language. It's the fastest-growing programming language out there and is becoming an integral part of many professions, from finance insurance, technology, Web development and cyber security. Students are introduced to fundamentals of Python programming with concepts of data structures, Variables, conditional loops, subroutines and functions. Students will be introduced to use powerful available libraries. | | | |

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| <p>Topical Outline: List course content in outline format.</p> | <p>[The outline should be in title case and use the numbering format below. You may not have subtopics, but if you do, here is the format.]</p> <ol style="list-style-type: none"> 1. Introduction to Python and Installing Python 2. Input, Processing and Output 3. Decision Structures 4. Repetition Structure 5. Functions 6. Files and Exceptions 7. Lists and Tuples 8. String Operations 9. Dictionaries and Sets 10. Classes and Object-Oriented Programming 11. Inheritance, Recursion 12. GUI Programming |
| <p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p> | <p>Upon successful completion of this course, the student will be able to do the following:</p> <p>COURSE:</p> <ol style="list-style-type: none"> 1. Declare variables, code counters and accumulators, work with relational and logical operators 2. Write code incorporating the three major programming constructs: sequence, selection, and iteration 3. Write code using Functions and Subroutine 4. Create Class and use Object Oriented Programming 5. Write interactive, real-time programs <p>PROGRAM: <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i></p> <ol style="list-style-type: none"> 1. Solve computer-related problems 2. Apply the use of the Program Development Life Cycle 3. Practical knowledge of a high-level programming language such as or Visual Basic and Python <p>GENERAL EDUCATION: <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p> <p>[Select the General Education Abilities from the listing below.]</p> <ol style="list-style-type: none"> 1. Critical Analysis/ Logical Thinking - Students will be able to organize, interpret, and evaluate evidence and ideas within and across disciplines; draw reasoned inferences and defensible conclusions; and solve problems and make decisions based on analytical processes. <p>Demonstrates: Identifies the issue(s); formulates an argument; explains and analyzes relationships clearly; draws reasonable inferences and conclusions that are logical and defensible; provides support by evaluating credible sources of evidence necessary to justify conclusions.</p> <p>Does Not Demonstrate: Identifies few or no issues; formulates an argument without significant focus; provides an unclear explanation of analysis and relationships; drawing few reasonable inferences and conclusions that are illogical and indefensible; provides little to no support using credible sources of evidence necessary to justify conclusions.</p> 2 Information Literacy/Continuing Learning - Students will be able to use traditional and digital technology to access, evaluate, and apply information to the needs or questions confronting them throughout their academic, professional, and personal lives. |

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| | <p>Demonstrates: Collects and synthesizes relevant and authoritative information resources appropriate to need and audience and utilizes current technologies to solve problems, complete projects, and make informed decisions.</p> <p>Does Not Demonstrate: Does not collect and synthesize relevant and authoritative information resources appropriate to need and audience nor satisfactorily utilize current technologies to solve problems, complete projects, and make informed decisions.</p> |
| <p>Evaluation: List how the above outcomes will be assessed.</p> | <p>Assessment will be based on the following criteria:</p> <ol style="list-style-type: none"> 1. Quizzes 2. Programming Assignments 3. Exams |
| <p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p> | <p>Required: [No special facilities are required. Or list what is required.]</p> <ol style="list-style-type: none"> 1. Computer Lab 2. Proper IDE environment |
| <p>Textbook(s)</p> | <p>Textbook will be selected at the time of course offering</p> |