Washtenaw Community College Comprehensive Report

CPS 141 Introduction to Programming Using Python
Effective Term: Spring/Summer 2019

Course Cover

Division: Business and Computer Technologies
Department: Computer Instruction
Discipline: Computer Science
Course Number: 141
Org Number: 13400
Full Course Title: Introduction to Programming Using Python
Transcript Title: Intro Programming Using Python
Is Consultation with other department(s) required: No
Publish in the Following:
Reason for Submission: Course Change
Change Information:
Consultation with all departments affected by this course is required.
Outcomes/Assessment
Objectives/Evaluation
Rationale: Full course approval
Proposed Start Semester: Winter 2019
Course Description: In this course, students are introduced to programming using Python. Topics include applications in informatics, accessing data on the Internet and human-computer interactions.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Level 3

Requisites

Level II Prerequisite
Basic skills using computers including, but not limited to, using a web browser; creating, saving, and finding files on a computer.

General Education

Request Course Transfer

Proposed For:

University of Michigan

Student Learning Outcomes

1. Identify and use simple programming control structures including selection and iteration.
   Assessment 1
   Assessment Tool: Departmentally-developed final exam
   Assessment Date: Winter 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: At least 70% of students must score 75% or higher
   Who will score and analyze the data: Department faculty and external sources (if available)

2. Identify and use intrinsic data structures and objects using custom classes.
   Assessment 1
   Assessment Tool: Departmentally-developed final exam
   Assessment Date: Winter 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: At least 70% of students must score 75% or higher
   Who will score and analyze the data: Department faculty and external sources (if available)

3. Identify the appropriate use of simple design patterns in programming.
   Assessment 1
   Assessment Tool: Departmentally-developed final exam
   Assessment Date: Winter 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: At least 70% of students must score 75% or higher
   Who will score and analyze the data: Department faculty and external sources (if available)

4. Use built-in and library functions and write basic functions.
   Assessment 1
   Assessment Tool: Departmentally-developed final exam
   Assessment Date: Winter 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: At least 70% of students must score 75% or higher
   Who will score and analyze the data: Department faculty and external sources (if available)

5. Derive meaning from economic, climatic, medical, and other types of data sets that impact society.

Assessment 1

Assessment Tool: Project portfolio including source code, reports and charts
Assessment Date: Winter 2020
Assessment Cycle: Every Three Years
Course section(s)/other population: All sections
Number students to be assessed: All students
How the assessment will be scored: Departmentally-developed rubric
Standard of success to be used for this assessment: 70% of students will score 75% or higher
Who will score and analyze the data: Departmental faculty

Course Objectives

1. Write basic programs using the FOR or WHILE statement with different object sets.
2. Write programs that use the various forms of the IF statement.
3. Write programs that use strings and string functions.
4. Write programs that use lists and list functions.
5. Write programs that use dictionaries and dictionary functions.
6. Develop a class and use the derived objects in a basic program.
7. Write programs that accumulate and count.
8. Use list comprehensions, MAP, FILTER, and REDUCE to process lists and dictionaries.
9. Process data from simple text and csv files.
10. Write and use functions in basic programs.
11. Develop basic programs that access web services using REST APIs.
12. Parse JSON data returned from a web service.
13. Write programs that produce basic statistics.
14. Write programs that visualize information in a manner supportive of human perceptual strengths.
15. Use python libraries to process and visualize data.

New Resources for Course

None.

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom
Computer workstations/lab
Data projector/computer

Reviewer	Action	Date
Faculty Preparer:		
Michael Galea	*Faculty Preparer*	*Sep 11, 2018*
Department Chair/Area Director:		
Philip Geyer	*Recommend Approval*	*Sep 12, 2018*
Dean:		
Eva Samulski	*Recommend Approval*	*Sep 13, 2018*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Oct 18, 2018*

Assessment Committee Chair:

Shawn Deron	*Recommend Approval*	*Oct 22, 2018*

Vice President for Instruction:

Kimberly Hurns	*Approve*	*Nov 02, 2018*