Washtenaw Community College Comprehensive Report

CPS 161 An Introduction to Programming with Java
Effective Term: Winter 2020

Course Cover
Division: Business and Computer Technologies
Department: Computer Science & Information Technology
Discipline: Computer Science
Course Number: 161
Org Number: 13400
Full Course Title: An Introduction to Programming with Java
Transcript Title: An Intro to Programming /Java
Is Consultation with other department(s) required: Yes
Please Explain:
Meet with CPS faculty to discuss changes.
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
    Course description
    Pre-requisite, co-requisite, or enrollment restrictions
    Outcomes/Assessment
    Objectives/Evaluation
    Other:
Rationale: Course outcome needs to be updated based on the findings in the assessment report and to align with the updated CPS 261 advanced Java course. Objectives have been added and reorganized.
Proposed Start Semester: Winter 2020
Course Description: In this course, students are introduced to the Java programming language. Looping, conditional logic and string manipulation are some of the basic programming concepts covered. Object-oriented concepts are covered such as objects and classes, constructors, inheritance, and polymorphism. Abstract classes and interfaces are minimally covered. CPS 261 will cover these topics in depth. Prior programming experience is recommended. Students who have no programming experience should consider taking CPS 120.

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 4

Requisites

General Education
Degree Attributes
 Statewide articulation approved
General Education Area 7 - Computer and Information Literacy
 Assoc in Arts - Comp Lit
 Assoc in Applied Sci - Comp Lit
 Assoc in Science - Comp Lit

Request Course Transfer
Proposed For:
 Eastern Michigan University
 Other :

Student Learning Outcomes

1. Identify appropriate use of simple programming constructs including loops and conditional logic.
    ### Assessment 1
    Assessment Tool: Multiple choice questions on a departmental exam
    Assessment Date: Winter 2022
    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: Answer key
    Standard of success to be used for this assessment: 70% of the students who take the exam will score better than 70%.
    Who will score and analyze the data: Departmental faculty

2. Identify appropriate use of simple object-oriented concepts such as constructors, methods and overriding methods.
    ### Assessment 1
    Assessment Tool: Multiple choice questions on a departmental exam
    Assessment Date: Winter 2022
    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: Answer key
    Standard of success to be used for this assessment: 70% of the students who take the exam will score better than 70%.
    Who will score and analyze the data: Departmental faculty

3. Identify appropriate use of more advanced object-oriented concepts such as inheritance and polymorphism.
    ### Assessment 1
    Assessment Tool: Multiple choice questions on a departmental exam
    Assessment Date: Winter 2022
    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: Answer key
Standard of success to be used for this assessment: 70% of the students who take the exam will score better than 70%.
Who will score and analyze the data: Departmental faculty

4. Identify appropriate use of exceptions.
   Assessment 1
   Assessment Tool: Multiple choice questions on a departmental exam
   Assessment Date: Winter 2022
   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: Answer key
   Standard of success to be used for this assessment: 70% of the students who take the exam will score better than 70%.
   Who will score and analyze the data: Departmental faculty

5. Develop Java code that uses object-oriented concepts and constructs.
   Assessment 1
   Assessment Tool: Programming exercise
   Assessment Date: Winter 2022
   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 the students will successfully complete the exercise.
   Who will score and analyze the data: Departmental faculty

Course Objectives
1. Develop, compile, and run Java programs using Eclipse.
2. Identify and use identifiers to name variables, constants, methods, and classes.
3. Read input from the console using the Scanner class.
4. Identify and implement selection control using one-way, two-way if statements, nested if, multi-way if and switch statements.
5. Follow the loop design strategy to develop loops using while, do-while and for statements.
6. Identify and describe objects and classes, and use classes to model objects.
7. Demonstrate how to define classes and create objects.
8. Distinguish between object reference variables and primitive-data-type variables.
9. Create objects using constructors.
10. Distinguish between instance and static variables and methods.
11. Identify and define a subclass from a superclass through inheritance.
12. Identify and invoke the superclass's constructors and methods using the super keyword.
13. Identify and override instance methods in the subclass.
14. Distinguish differences between overriding and overloading.
15. Explore and override the toString and equals method in the Object class.
16. Identify polymorphism and early and late binding.
17. Recognize exceptions and exception handling.
18. Recognize the exception hierarchy in Java.
19. Distinguish checked and unchecked exceptions.

New Resources for Course

Course Textbooks/Resources
Textbooks

Allen B. Kowney and Chris Mayfield. *Think Java (OER book)*, 6.1.3 ed. Green Tea Press, 2016
Savitch. *Absolute Java*, ed. Addison-Wesley, 2005
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom
Computer workstations/lab

Reviewer	Action	Date
Faculty Preparer:		
Jai Bai	*Faculty Preparer*	*Jun 26, 2019*
Department Chair/Area Director:		
Philip Geyer	*Recommend Approval*	*Jul 10, 2019*
Dean:		
Eva Samulski	*Recommend Approval*	*Jul 11, 2019*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Aug 06, 2019*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Aug 19, 2019*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Aug 19, 2019*