**BARTON COMMUNITY COLLEGE**

**COURSE SYLLABUS**

# **GENERAL COURSE INFORMATION**

Course Number: PRGM 1037

Course Title: Computer Science I

Credit Hours: 4

Prerequisite: PRGM 1007 Foundations of Computer Science with a grade of C or better

Division/Discipline: Workforce Training and Community Education

Course Description: This course is an introduction to the concepts of procedural programming. The course emphasizes good problem-solving techniques to develop algorithms which are implemented in a high level language. Topics include: problem-solving theory, algorithm and program design methodology using control structures, procedures, arrays, testing, recursion, and object-oriented programming.

# **INSTRUCTOR INFORMATION**

# **CLASSROOM POLICY**

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

The College reserves the right to suspend a student for conduct that is detrimental to the College's educational endeavors as outlined in the College catalog.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. Learn the rules of, and avoid instances of, intentional or unintentional plagiarism.

Anyone seeking an accommodation under provisions of the Americans with Disabilities Act should notify Student Support Services. Additional information about academic integrity can be found at the following link: <http://academicintegrity.bartonccc.edu/>

# **COURSE AS VIEWED IN THE TOTAL CURRICULUM**

Computer Science I is required for the A.S. Computer Science and Computer Information Systems degrees. Computer Science I is the first course in a two course sequence which develops a foundation in programming fundamentals.

Transferability varies among institutions, and perhaps even among departments, colleges, or programs within an institution and may change from time to time without notification. Therefore, it is the student's responsibility to obtain relevant information from intended transfer institutions during his/her tenure at Barton Community College to insure that he/she enrolls in the most appropriate set of courses for transferability. <https://bartonccc.edu/transfer/schools>

# **ASSESSMENT OF STUDENT LEARNING**

Barton Community College is committed to the assessment of student learning and to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton, as a learning college, in finding ways to improve student learning.

## Core Competencies

1. Recognize problem solving strategies and software development
   1. Explains multiple problem solving strategies
   2. Identify the steps in software development
2. Apply software development principles
   1. Identify the program requirements
   2. Design an algorithm to solve a problem
   3. Implement an algorithm using a high level programming language
   4. Apply testing strategies to a program
   5. Create proper program documentation
3. Recognize the proper use of the following programming components: variables, I/O, control structures, procedures, arrays, and recursion
   1. Recognize variable types
   2. Identify input and output alternatives
   3. Explain the proper use of sequential, conditional, and repetitive control structures
   4. Describe the use of procedures
   5. Identify arrays and the uses of array processing
   6. Explain the use of the recursion
4. Apply programming components to solve problems with a high-level programming language
   1. Create and modify variables
   2. Apply user input and output as well as file I/O
   3. Implement sequential, conditional, and repetitive control structures
   4. Apply procedural methodology
   5. Implement arrays and process array contents
   6. Apply recursive strategies in a program
5. **INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS**

# **TEXTBOOKS AND OTHER REQUIRED MATERIALS**

# **REFERENCES**

# **METHODS OF INSTRUCTION AND EVALUATION**

# **ATTENDANCE REQUIREMENTS**

1. **COURSE OUTLINE**