# 8/15/2020

# brcc keystone logo

Baton Rouge Community College

*Academic Affairs Master Syllabus*

Date Approved: 2 September 2020

Term and Year of Implementation: Fall 2020

**Course Title:** Software Design and Programming I

**BRCC Course Rubric:** CSCI 1933

**Previous Course Rubric**: CSCI 193

**Lecture Hours per week-Lab Hours per week-Credit Hours**: 3-0-3

**Per semester: Lecture Hours-Lab Hours-Instructional Contact Hours**: 45-0-45

**Louisiana Common Course Number:**

**CIP Code:** 11.0201

**Course Description:** Introduces the first of a two-course sequence intended for students wishing to transfer to a four-year institution for a major or minor in computer science. Offers a disciplined approach to problem solving, program design, algorithms, and logic development. Uses high-level programming language as a vehicle for expressing algorithms.

**Prerequisites:**  CSCI 1923 (or CSCI 192) or instructor’s approval

**Co-requisites:** None

**Suggested Enrollment Cap:** 20

**Learning Outcomes.** *Upon successful completion of this course, the students will be able to:*

1. Examine the anatomy of a simple C++ program.

2. Discuss data types, expressions, and input/output.

3. Recognize loop control strategies and looping operations.

4. Analyze value-returning functions.

5. Create a C++ program.

**Assessment Measures.** Assessment of all learning outcomes will be measured using the following methods:

1. Instructor prepared tests and final exam

2. Homework assignments

3. Programming Projects

**Information to be included on the Instructor’s Course Syllabi:**

* ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.
* ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor’s and/or the department’s policy for make-up work. For example in a speech course, “Speeches not given on due date will receive no grade higher than a sixty” or “Make-up work will not be accepted after the last day of class”.
* ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.
* ***General Policies*:** Instructors’ policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.
* ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.
* ***Safety Concerns:*** In some courses, this may be a major issue. For example, “No student will be allowed in the lab without safety glasses”. General statements such as, “Items that may be harmful to one’s self or others should not be brought to class”.
* ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

**Expanded Course Outline:**

I. An Overview of Computers and Programming Languages

A. Computer Hardware/Software

B. The Evolution of Programming Languages

C. Introduction to Object-Oriented Programming

II. Basic Elements of C++

A. The Basics of a C++ Program and Data Types

B. Expressions, Input, and Output

C. Program Style and Form

III. Input/Output

A. I/O Streams and Standard I/O Devices

B. Using Predefined Functions in a Program

C. Input Failure

D. Output and Formatting Output

IV. Control Structures I (Selection)

A. Relational Operators

B. Logical (Boolean) Operators and Logical Expressions

C. Selection: if and if … else

D. Switch Structures

V. Control Structures II (Repetition)

A. The while Looping (Repetition) Structure

B. The for Looping (Repetition) Structure

C. Nested Control Structures

VI. User-Defined Functions I

A. Standard and User-Defined Functions

B. Value-Returning Functions

VII. User-Defined Functions II

A. Void Functions

B. Value and Reference Parameters and Memory Allocations

C. An Introduction to Function Overloading

VIII. User-Defined Simple Data Types, Namespaces, and String Type

A. Enumeration Type

B. Declaring Variables

IX. Arrays and Strings

A. Introduction to Arrays

B. Introduction to c-strings

C. Parallel Arrays