



## MASTER COURSE OUTLINE

Prepared By: Arthur Wanner/Tom Willingham

Date: April 2020

## COURSE TITLE

Computer Science I: C++

## GENERAL COURSE INFORMATION

Dept.: CS&

Course Num: 131

(Formerly:)

CIP Code: 11.0201

Intent Code: 11

Program Code: 515

Credits: 5

Total Contact Hrs Per Qtr.: 88

Lecture Hrs: 22

Lab Hrs: 66

Other Hrs:

Distribution Designation: Specified Elective (SE)

## COURSE DESCRIPTION (as it will appear in the catalog)

An introduction to computer programming using the C++ programming language. Students learn algorithm development and computational problem solving while writing C++ programs. Language features that are studied include keywords, variables, data types, control structures, functions, strings, structures and vectors.

## PREREQUISITES

MATH& 141 or concurrent enrollment

## TEXTBOOK GUIDELINES

Textbook and materials to be determined by CS Faculty

## COURSE LEARNING OUTCOMES

*Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:*

1. Apply the knowledge and skills learned from the prerequisite courses
2. Pass the CompTIA Cloud+ (or industry equivalent) certification tests

## INSTITUTIONAL OUTCOMES

IO1 **Communication:** Students will be able to communicate clearly and effectively within a workplace context

IO2 **Quantitative Reasoning:** Analyze and solve computational problems using a modern program language

## COURSE CONTENT OUTLINE

1. Development environment setup and first program
2. Statements, expressions, data types, variables, values, operations
3. Program modularization using functions
4. If statements and conditional expressions
5. Repetition / iteration using for and while loops
6. String objects and indexing
7. Data encapsulation using Structures
8. Simple data structures using Vectors
9. File Input / Output

**DEPARTMENTAL GUIDELINES** *(optional)*

\_\_\_\_\_

**DIVISION CHAIR APPROVAL**

\_\_\_\_\_

**DATE**