

**SU DEPARTMENT OF MATHEMATICS & COMPUTER
SCIENCE SYLLABUS (Tentative)
COSC 120 Computer Science I**

Description: A course for students interested in computer programming, which involves solving problems by designing, implementing, and testing algorithms. Implementation will be done in the high-level language C++. Emphasis throughout the course is on problem solving and learning to develop computer programs that are readable, well-documented, efficient, and correct.
(Three hours lecture and two hours lab per week.)

Required Text: “Starting Out with C++,” by Tony Gaddis; Pearson/Addison Wesley, 9th Edition
ISBN: 978034498379.

Prerequisite: COSC 117 with a “C” or better or equivalent programming experience.

	Weeks
<i>Introduction to Computer Software and Hardware</i>	1.0
History of C++, Computer Structure, Concept of High-Level vs. Lower-level Languages, C++ Programming Environments, and C++ Program Structures	
<i>Data Types, Expression, Statements, and Input/output</i>	2.0
Identifiers, Primitive Data Types, Expressions, Control Structures, Loops, File and Stream Input/Output, Variable Declarations, Constant Variables, Static Variables and Local/Global Variables, Variable Scope	
<i>Function and Parameter Passing Method</i>	2.5
Defining and Calling Functions, Function Prototypes, Function Return Types, Parameter Passing Methods in C++, Function Prototypes with Default Arguments, and Function Overloading	
<i>Arrays and Structured Data Types</i>	4.0
One-Dimensional and Two-Dimensional Arrays, Accessing Arrays with Index Values, Passing arrays as Parameters, Elementary Sorting and Searching with Arrays, User Defined Structured Data Types, and Accessing Members of Structured Data Type	
<i>Advanced Topics</i>	3.5
Pointers, Passing Pointers as Parameters, Introduction to Classes, Types of Class Members, Constructors and Destructors in Classes, Accessing Class Members, and Dynamic Memory allocation using Pointers	
<i>Optional Topics</i>	
Introduction to operator overloading, and introduction to recursion	
<i>Testing</i>	1.0

	14.0

EVALUATION

Programs (Design and & Implementation): 40 - 60%
Tests, Quizzes, & Final Exam: 40 - 60%

NOTE: ONCE A STUDENT HAS RECEIVED CREDIT, INCLUDING TRANSFER CREDIT, FOR A COURSE, CREDIT MAY NOT BE RECEIVED FOR ANY COURSE WITH MATERIAL THAT IS EQUIVALENT TO IT OR IS A PREREQUISITE FOR IT.