

CSI 2320: C++ for Programmers

**Credits Hours:** 2 credits, 1.78 contact hours/week.

**Instructor:** Jie Yang, Ph.D.

**Text book:** The C++ Programming Language, Special Edition, by Bjarne Stroustrup, Addison-Wesley Press.

### **Specific course information**

A course in C++ programming for programmers with basic knowledge of data types and control structures in programming languages. Topics include pointers, memory management, classes, polymorphism, overloading, templates, input/output, parameter passing, multiple inheritance, standard template library, and philosophical differences in major object-oriented programming languages.

**Prerequisites:** CSI 1420

### **Elective course**

**Course Objectives:** Upon successful completion of this course, students should be able to

- Describe pointers and references
- Describe dynamic memory allocation
- Describe classes & objects
- Describe constructors and destructors
- Describe static data members and static member functions
- Describe function overloading and operator overloading
- Describe templates and C++ standard template library (STL)
- Describe inheritance
- Describe polymorphism
- Describe virtual functions

### **List of Topics:**

- Introduction and motivation
- A Tour of C++ and coding style
- Standard Library
- Types and Declarations
- Pointers, Arrays, and Structures
- Expressions and Statements
- Functions
- Classes

- Object Initialization
- Operator Overloading
- Inheritance
- Polymorphism
- Templates and Standard Template Library
- Exception Handling