



## Section Details

### Section Details Information

**Offering Name:** C++ Programming, Comprehensive

C++ is a general-purpose object-oriented programming language that offers portability, speed, and modularity, as well as compatibility with C and other languages. Because most automation, embedded applications, gaming, and many large data processing applications are written in C++, it is essential that software developers understand and master it. Hardware engineers are increasingly using C++ and OOP in system verification tasks. This course offers an excellent foundation in developing optimized C++ applications. The participants will learn to write faster and modular code, and the debugging techniques, for real-world applications. There will be assignments and exercises to accompany the lectures.

**Topics Include:**

- Principles of object-oriented analysis and design
- Stream classes for input/output and to read/write files
- User defined data types using structures and classes
- Declarations of identifiers, pointers, function pointers and references
- Reuse code and extend existing data types through inheritance
- Memory management and dynamic array declarations
- Create class/function templates and understand STL
- Use static member variables and static member functions
- Singleton design pattern using static member functions
- Declare friend functions and friend classes
- Function overloading and operator overloading
- Polymorphism concept using virtual function
- Understand exceptions handling techniques using try/catch syntax

**Note(s):** Students must have access to a C++ compiler.

**Skills Needed:** Experience with a high level programming language such as C.

**Section Number:** 18344.(056)

To see all meeting dates, click "Full Schedule" below.

**Electronic Course Materials:** A free soft copy of the course materials is available through UCSC Extension's Online Learning Center. For access instructions, go to UCSC Extension's Online Learning Center at <http://www.ucsc-extension.edu/online-faqs>. The account will be activated one day prior to the first class meeting. For details, please see <http://ucsc-extension.edu/course-materials>.

**Recommended Texts:** C++ Primer (5th ed), Stanley Lippman and Josee Lajoie, Addison-Wesley Professional, ISBN-10: 0321714113 ISBN-13: 978-0321714114

**CEU Hours:**

**Max. Enrollment:** 40

**Estimate Enrollment:** 70

**Actual Enrollment:** 7

**Department:** Computer Programming

**Instructor(s):** Suleman Saya

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