

Advanced Programming in C++

Afshin Sepehri - Summer 2002

Course Information

- **Lecture:** Mondays and Fridays 5:00pm – 6:30pm, Place: to be set
- **Recommended Text:** Deitel & Deitel, *C++ How to Program*, Prentice Hall, 2001
- **Web Page:** <http://www.ece.umd.edu/~afshin/c++>

Instructor Information

- **Office:** 3450 A.V. Williams Building
- **Phone:** 301-405-8099
- **Email:** Afshin@eng.umd.edu

General Information

This course is an unofficial course for a number of friends who are interested in learning Object Oriented Programming in C++. This is an absolutely free course and there is no commitment either for instructor or for students.

Course Syllabus

- **Week 1:** C – A Quick Review (Project 0)
Common operations, control structures, functions, parameter passing, arrays and structures, preprocessors, variable types and scopes, main arguments
- **Week 2:** Pointers and Strings (Project 1)
Pointer operators, memory allocation, double pointers, call by value and reference, pointer arithmetic, array of pointers, string functions
- **Week 3:** C++ Stream Input/Output and File Processing (Project 2)
Input and output streams, stream insertion and extraction operators, stream functions, file operations, sequential and random accesses
- **Week 4:** Classes and Data Abstraction
Motivation, classes vs. structures, objects, member variables and functions, encapsulation, constructors and destructors
- **Week 5:** Classes Part II (Project 3)
Default and copy constructors, constant members, call by alias, friend functions and classes, this pointer, pointer to objects, inline functions, static members
(One week break)
- **Week 6:** Operator Overloading and String Class (Project 4)
Operator functions, member vs. friend operators, common operators, string class
- **Week 7:** Inheritance (Project 5)
Motivation, base classes and derived classes, protected members, inheritance types, constructors and destructors in derived classes, multiple inheritance
- **Week 8:** Polymorphism
Motivation, Virtual functions, abstract base classes, dynamic binding

Note: One week may be added or merged. Some extra concepts may be covered.

This document was created with Win2PDF available at <http://www.daneprairie.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.