

CS 1044

Programming in C

Fall 1999

Instructor: Donald Allison
Office: 626 McBryde, tel. 231-4212, allison@cs.vt.edu
Office Hours: MWF 11.00 am – 12.30 pm, and by appointment
Class Meets: MWF 1.00 - 1.50 pm in Norris Hall 136 (Index# 9345)
MWF 3.00 – 3.50 pm in Squires Coliseum (Index# 9346)
GTAs: Rob Capra, Reena Khosla, Jacob Somervell
Textbook: Dale, Weems, and Headington, *Programming and Problem Solving in C++* (2nd edition), Jones and Bartlett, 1999
(suggested) Computer Science 1044 notes available from A-1 Copies
WWW: <http://ei.cs.vt.edu/~cs1044/fall.99/allison/>

Grading Policy:	Homeworks	40%	Quizzes	10%
	Midterm I	13%	Final	24%
	Midterm II	13%		

Honor Code:

The honor code will be strictly enforced in this course. All assignments submitted shall be considered graded work, unless otherwise noted. All aspects of your course work are covered by the honor system. Any suspected violations of the honor code will be promptly reported to the honor system. Honesty in your academic work will develop into professional integrity. The faculty and students of Virginia Tech will not tolerate any form of academic dishonesty.

Assignments and Grading Policy:

Above all READ and UNDERSTAND notes discussed in class. Experience has shown that the single most important thing you can do in this course is to come to class faithfully.

This is in large part a programming course, and the homework components will count for 40% of your grade. You are expected to produce programs which are readable as well as correct.

Programs (source code files) will be submitted to the Enhanced Automated Grader:

<http://ei.cs.vt.edu/~eags/EAGS.html>. There is a Student Guide to Submitting at this URL. It describes how to prepare a program for submission and discusses how the Automated Grader scores your submission.

If any student needs special accommodations because of a disability, please contact the instructor during the first week of classes.

Equipment and Programming Language:

All programming will be done in the C++ programming language. Programming will be done on an IBM PC or compatible running Windows NT using the Microsoft Visual C++ compiler. Several of these machines are available in the departmental Computing Lab in McBryde 116/118.

Course Outline

Reading

1. Introduction
 - Problem Solving: Simple C++ program
 - Computer Systems: Hardware and Software

p. 1-42
Notes
2. Programming Process
 - Algorithms, Program Translation
 - Top Down Design, Program Documentation

Notes
3. C++ Fundamentals
 - Syntax, Semantics
 - Data Types: Constants, Statements
 - Arithmetic Expressions, Operator Hierarchy
 - Input/Output and examples

p. 47-57
p. 58-73
p. 107-116
p. 123-8, 154-176
4. Booleans and Selection
 - Boolean Expressions, Truth Tables, Operator Hierarchy
 - If/Else statements, nested If statements
 - Switch Statements

p. 212-227
p. 228-243
p. 462-466
5. Looping Structures
 - Count and Event Controlled Loops
 - Do - While, For statements
 - Break and Continue Statements

p. 276-302
p. 468-474
p. 475-477
6. Functions
 - Function Structure, Scope
 - Parameters: Types, Lists, Mechanisms for Passing Parameters

p. 326-342
p. 344-355
7. Number Representation
 - Integers, Floating Point Numbers
 - Precision, Size, Difficulties, Errors

p. 496-501
p. 520-530, Notes
8. Elementary Types
 - User Defined, Enumerated Types
 - Type Coercion

p. 532-546
9. Arrays
 - Structured types, Indices, Array Operations
 - Array Parameters
 - Parallel and Multi-Dimensional Arrays

p. 664-675
p. 676-678
p. 685-704
10. Structures (Records)
 - Structure Referencing, Access, Manipulation
 - Arrays of Structures, Hierarchical Structures

p. 579-589
11. Searching and Sorting
 - Linear, Binary Search
 - Bubblesort, Selection Sort, Examples

p. 764-771
Notes