

Computer Science and Programming (Course Number: 0704.103)
Rowan University, Spring Semester, 2003
Meeting Times: Monday, 6:30PM – 9:00PM (Rowan 104 - Lecture)
Wednesday, 6:30PM – 9:00PM (Robinson 325 - Lab)

Instructor: Professor Gregory Safko
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Text: Problem Solving with C++: The Object of Programming (Fourth Edition) (required)
Author: Walter Savitch Publisher: Addison-Wesley
ISBN 0-321-11347-0

Prerequisites:
0701.102 (Introduction to Programming) or equivalent preparation. This course emphasizes programming methodology, algorithms and simple data structures. A programming language rich enough to allow easy implementation of data structures is studied. Prior programming experience in any programming language is expected for this course.

Also helpful is a familiarity with the Windows 95/98 operating system for the programming portions of the course – how to use editors, how to print files, and how to do basic file management (copying and moving files, creating directories, and so on).

It is assumed that you have previous experience with programming. In particular, you should be familiar with concepts such as typed variables, loops, and functions. If you are not familiar with these concepts you should take the "Introduction to Programming" course first. It is possible to take this course without a prior programming background, but most students who attempt it do poorly, or withdraw from the course.

Grading: Homework/Classwork: 20%
2 Tests: 15% each = 30%
Projects: 20%
Final Exam: 30%

Letter Grade: A: 92 to 100
A-: 90 to < 92
B+: 88 to < 90
B: 82 to < 88
B-: 80 to < 82
C+: 78 to < 80
C: 72 to < 78
C-: 70 to < 72
D+: 68 to < 70
D: 62 to < 68
D-: 60 to < 62
F: Below 60

Homework and exam policy:

Most of the homework assignments will be programming assignments. You may get help from classmates on debugging your program or on understanding the features of the programming language, but the design of the program should be your own, and you should type your own program and code, test it, and print it.

Exams will focus on the concepts covered in Savitch and the lectures. The final exam will be cumulative but will emphasize material from the second half of the course. In addition, there will be 2 tests, and (at my discretion) as series of announced or unannounced quizzes.

If a particular exam warrants it, you may bring to the tests one 8 1/2 x 11" sheet of paper containing any course information that you find useful. (I suggest including notes on points of the language syntax that you find hard to remember.) The tests will be closed book otherwise.

The final exam will be closed book.

Grade points will be deducted for late homework at the rate of 25 points per day (this is much better than a policy where no late work will be accepted). Homework that runs more than a page must be stapled together, with your name on each page.

Life happens, and you may have to miss a class when I am administering an exam. If you miss an exam, the burden is on you to schedule a mutually convenient make-up time. In fairness to others, however, the make-up exams are more challenging.

Classroom/Lab policy:

With the exception of “baby beepers”, the use of cell phone, pagers, and beepers are not permitted in the classroom. This also includes alarm watches.

The classroom is an area of learning. It is not an area where your friends and children hang out while you attend class. If you are bringing friends or children along because of circumstances beyond your control (carpooling, etc.) please have them wait for you in the lobby areas while you attend class.

No food or drinks of any type are permitted in the classrooms or the labs.

Course Topics:

This course emphasizes programming methodology, algorithms and simple data structures, using procedural and object-oriented paradigms. A modern programming language, C++, which is rich enough to allow easy implementation of data structures and objects, will be used. CS&P is comprised of both lecture time and lab time (programming).

Important Web Sites:

Check out the **academic calendar** at <http://www.rowan.edu/calendar/>

Here is a great place to get information on registration, drop/add, term breaks, exam schedules, etc.

Check out the **student campus portal** at <http://cp.rowan.edu/>

Here is where you can log on and check email, get your grades, access student recourses, access handbooks and course catalogs, etc.

Attendance Policy:

All students are expected to attend all classes. Due to the accelerated nature of this course, it is extremely difficult to catch up on missed material. More than 3 latenesses or absences will affect your grade by one standing. In any case, please extend the courtesy to me and let me know if you will be absent or late.

Approximate Schedule (As of January 18, 2003):

Please complete each reading assignment before that evening's class.

Week 1	Introduction & Syllabus Course Introduction Review of Basic Computer Science Concepts, Environment Settings Header Files Data Types and Assignments Input & Output Read Chapters 1 & 2
Week 2	Structured Programming Concepts Predefined and User-Defined functions Local and Global Variables Overloading Call-By-Value and Call-By-Reference Read Chapters 3 & 4
Week 3	Basic Screen I/O File I/O Character I/O Objects, Classes, Structs, and Abstract Data types Read Chapters 5 & 6
Week 4	Boolean Operators Program Control Loops Read Chapter 7 & 8
Week 5	Test #1

Week 6	User-defined namespaces and Header files One- and Two-Dimensional Arrays Read Chapter 9 & 10
Week 7	Strings, Vectors, and Arrays Read Chapter 11
Week 8	Pointers and Classes Dynamic (Object Oriented) Arrays Read Chapter 12
Week 9	Recursion and Recursive Functions Read Chapter 13
Week 10	Test # 2
Week 11	Templates Templated Classes Read Chapter 14
Week 12	Pointers and Linked Lists Read Chapter 15
Week 13	Inheritance and Polymorphism Read Chapter 16
Week 14	Exception Handling Special Topics Final Exam Review Read Chapter 17
Week 15	Final Exam