

SYLLABUS

Schedule No 56389

Instructor Sharon Wu
Phone 638-3641 ex-3497
Office Hours M 9:00 am – 10:30 am; LRC 106
W F 9:30 am – 10:30 am; FEM 4D
or By appointment
Office FEM 4D
E-mail sharon.wu@reedleycollege.edu

On Campus Meetings: Following are five required on campus meetings:

01/13/09	FEM 8	Tuesday	6:30 p.m. – 8:00 p.m	Orientation
02/24/09	FEM 8	Tuesday	6:30 p.m. – 8:00 p.m	Test #1
04/14/09	FEM 8	Tuesday	6:30 p.m. – 8:00 p.m	Test #2
05/12/09	FEM 8	Tuesday	6:30 p.m. – 8:30 p.m	Term Project Presentation
05/19/09	FEM 8	Tuesday	6:30 p.m. – 8:30 p.m	Final Exam

Course Objectives:

In the process of completing this course, students will:

- Write programs using object-oriented programming and the C++ language
- Define and use dynamic arrays, linked list, stacks and queue data structures
- Use string, stack and queue classes defined in C++ Standard Libraries
- Write programs using pointers, recursion and file manipulation techniques
- Understand and utilize binary search tree data structure.
- Identify and correct syntax and logical errors in computer programs
- Create proper test cases to test computer programs.
- Write a total of 1000 to 2000 lines of programs.

Course Outcomes:

Upon completion of this course, students will be able to:

- Construct classic data structures used in all computer programs.
- Write programs using advanced programming concepts
- Analyze problems, design and develop computer programs to solve these problems.
- Debug and test programs.

Course Outline:

- Input and Output in C++: Writing to standard output; Reading from standard input; Writing or reading a text file.
- Software Development: Program specification, design, implementation; Running time analysis; Big-O notation; Testing and debugging.
- Abstract Data Types and C++ Classes: Classes and members; Constructors; Using a name space, header file, and implementation file; Classes and Parameters; Operator overloading.
- Container Classes: The bag class; The sequence class.
- Pointers and Dynamic Arrays: Pointers and Dynamic Memory; Pointers and Arrays as parameters; The string class.
- Linked List: A node class; A linked list; A container class with a linked list.
- Software Development with Templates, Iterators, and The Standard Library: Template functions; Template classes.
- Stacks: Stacks and the STL stack; Stack applications; Implementations of the stack class.
- Queue: Queue and the STL Queue; Queue applications; Implementations of the Queue class; Priority Queues.
- Trees: Introduction to Trees; Tree representations; Binary tree nodes; Tree traversals; Binary Search Trees.

Course Prerequisite:

Programming Concepts and Methodology I (CSCI 40) or
Programming for Scientists and Engineers (ENGR 40)

Textbook:

Data Structures and Other Objects Using C++, 3ed. By Main & Savitch, Addison-Wesley

Blackboard:

Blackboard is used to post course information, assignments, and announcements. Tegrity is used for some recorded lectures. You can access them via Blackboard.

To log-in Reedley College Blackboard:

User name: your student ID

Password: (* Be sure to change your password after you login)

C++ Compilers:

You can use any ANSI compliant C++ compilers, for example Borland C++ Compiler, Microsoft Visual C++ compiler, Dev C++...etc. I will use Borland C++ to run the programs that you turned in.

Borland C++ is used on RC campus. It is installed on the computers in the RC library computer lab and FEM 4E.

Homework Assignment:

Chapter homework is assigned for each chapter. The homework varies in length depends the material covered. Homework is due after the chapter is completed.

Homework is worth 10 points each and will be graded on **correctness, completeness, neatness, and effort** of the entire assignment. Points will be deducted for late homework.

In order to submit your homework on Blackboard, it should be in digital form. You can type your homework or scan your homework then submit it on Blackboard.

Programming Assignments:

Programs are assigned for each chapter. The assignments are posted on Blackboard. For each program, submit all related program files and program input/outputs.

Programs are graded using following criteria:

1. Correct syntax of computer language,
2. Program design and logic flow
3. Documentation and readability
4. Test cases.

Term Projects:

Term Projects are due at end of the semester. You are going to present your project (design, coding, execution) on 5/12/09.

Tests:

There are two tests and one final exam. The dates are:

02/24/09	Tuesday	6:30 p.m. – 8:00 p.m	Test #1
04/14/09	Tuesday	6:30 p.m. – 8:00 p.m	Test #2
05/12/09	Tuesday	6:30 p.m. – 8:30 p.m	Term Project Presentation
05/19/09	Tuesday	6:30 p.m. – 8:30 p.m	Final Exam

Grading:

- 50% of your final grade points are from the average of test scores.
- 30% of your final grade points are from the average of program lab assignments.
- 10% of your final grade points are from the average of chapter homework assignments.
- 10% of your final grade points are from the average of your term projects.

Final letter grade is assigned using following scale:

- 90-100 points A
- 80- 89 points B
- 70- 79 points C
- 60- 69 points D
- < 60 points F

If you have perfect attendance and your final grade is within 1 point (or 1%) of the next higher letter grade, you will be awarded the next higher letter grade.

Important Dates:

Class begin	Monday	01/12/09
Last day to register	Friday	01/30/09
Last day to change to/from a Pass/No-Pass grading basis	Tuesday	02/17/09
Last date to drop:	Friday	03/13/09
No classes:		
Martin Luther King, Jr. Holiday	Monday	01/19/09
Lincoln Holiday	Friday	02/13/09
Washington Holiday	Monday	02/16/09
Final Exam	Tuesday	05/19/09 6:30 p.m. – 8:30 p.m.