SYLLABUS

Class Hours:	M W 2:00 p.m. - 3:15 p.m.
	F 2:00 p.m. - 3:50 p.m.
Room No:	FEM 4E
Class No:	54001

Instructor:	Sharon Owens
Phone:	638-3641 ex-3497
Office Hours:	Tuesday, Wednesday, and Friday: 10:00 a.m. - 10:50 a.m.
	or by appointment

Course Objectives:

This class is the second programming course in college or university curriculum. It covers "Algorithms and Data Structures" using C++ language. Students will:

- understand the classic data structures used in all nontrivial programs
- be able to analyze computing problems, design and develop computer programs to those problems
- be able to test and debug programs

Course Outline:

- Principles of Programming and Software Engineering: Problem solving and software engineering; Modular design; Programming modularity, modifiability, ease of use, fail-safe programming, and style.
- Recursion: Recursive Functions; Searching an Array; Binary Search; Recursion and Efficiency.
- Data Abstraction: Abstract data type; ADTs and its implementation.
- Linked Lists: Pointers; Dynamic allocation of arrays; pointer-based linked lists; Programming with linked lists.
- Problem Solving with Abstract Data Types: Stack ADT, Queue ADT.
- Class Relationships: inheritance, Virtual functions and late binding, Class templates, Overloaded Operations.
- Sorting and Efficiency: Measuring the efficiency of algorithms, Sorting algorithms and their efficiency.
- Trees: ADT Binary Tree, ADT Binary Search Tree.
- Tables and Priority Queues: ADT table, ADT Priority Queue.

Course Prerequisite:

Programming Concepts and Methodology I (CSCI 40).

Textbook:

Data Abstraction and Problem Solvoing with C++, Walls and Mirrors, Second Edition, Carrano - Helman - Veroff, Addision-Wesley.

Homework and assignment:

Assignments will be made on a regular basis. Homework is assigned for each of the sections presented in the course. The homework varies in length depending the material covered. Assignments provide students with the necessary practice to acquire the skills taught in the course and provide a means of monitoring student progress. Consistent and timely completion of written assignments is absolutely essential to the successful completion of the course. **The assignments should be completed after the material has been presented in class and prior to the next class meeting. No assignment for the chapter will be accepted after the chapter test.** Homework should be done on 8.5" by 11" lined paper, stapled on upper left hand corner, with your name and chapter/section number on the upper right hand corner.

Programming Assignments (Lab Projects):

Programming projects are assigned for each chapter and they are due before the next lab session. Turn in your programming project on a floppy disk along with a listing of each program, program input, and output. Program projects are graded using following criteria: documentation, readability, test cases, and technical aspects.

Computer Lab:

Computer lab is in room FE 4E. Computers (IBM compatible) and HP laser printers are used in this lab. Turbo C++ is installed on all PCs. **Students need to have at least two floppy disks (3.5" High Density, 1.44 MB) ready for programming assignments.**

Cooperative Learning Groups:

After graduation, most of you will probably be working in jobs which will require you to function as a member of a project team. Working well in a group is an important skill which can be learned. Some of you may enjoy the group work more than others. In this course, group work
- gives you an opportunity to talk about the computer science subjects we are studying,
- provides moral support while you are working on computer programs, and
- offers you an opportunity to practice skills in working effectively as part of a team.

You will be working in groups on computer lab assignments. Each group will have 3 to 5 students. It seems to work best if there are four students in each group.

Attendance:

Attendance will be taken in each class. Tardiness will be count as absence. Students may be dropped from the class if they fail to attend the first class session of the semester. During the semester up to final drop date, any student who missed more than two weeks of class meetings may be dropped. College policies on attendance may be found in the Reedley College Class Schedule.

Evaluation:

- Each homework has maximum of **10 points** which is based on the thorough presentation of the solution to each problem and the completion of the entire assignment.
- Lab projects are **40 points** each. Programs are graded on documentation, readability, test cases, and technical aspects.
- Tests are **100 points** each. Early tests can be arranged with a **very** good reason. A more **difficult** late test can only be arranged if you have an excuse verified by an impartial party (i.e., a doctor or a court clerk…etc.).

Final points = (Average of homework) + (Average of Lab projects)
+ (average of tests) * 0.5

Final 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

Important Dates:

Class begin:	Monday	01/10/2000
Drop deadline date:	Friday	03/10/2000
No classes:	1/17/2000 (M), 2/18/2000 (F), 2/21/2000 (M), 4/17- 4/22 (Spring Break)	
Final Examine:	**Wednesday 05/17/2000 1:00 p.m. – 3:00 p.m.**	