Reedley College **Spring 2020**
CSCI 41 - Programming Concepts and Methodology II

SYLLABUS

Schedule No	50096
Hours/Room	Tuesday 2:00 – 5:30 pm Portable classroom RM 3 Thursday 2:00 – 3:50 pm Portable classroom RM 3

Instructor	Elliot Gertner, Ph.D
Phone	638-0300 ex-3497
Office Hours	MTWTh 12:45pm – 2 Pm (room: FEM 1D) or By appointment
Office	FEM 1D
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Course Objectives:

In the process of completing this course, students will:

1. Write programs using object-oriented programming and the C++ language
2. Design, implement, and test the implementation of "is-a" relationships among objects using a class hierarchy and inheritance.
3. Define and use dynamic arrays, linked list, stacks and queue data structures
4. Use string, stack and queue classes defined in C++ Standard Libraries
5. Write programs using pointers, recursion and file manipulation techniques
6. Understand and utilize binary search tree data structure.
7. Identify and correct syntax and logical errors in computer programs
8. Create proper test cases to test computer programs.
9. Write a total of 1000 to 2000 lines of programs.

Course Outcomes:

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

1. Construct classic data structures used in all computer programs.
2. Write programs using advanced programming concepts
3. Analyze problems, design and develop computer programs to solve these problems.
4. Use a software tool called a debugger to debug and test programs.

Course Outline:

1. More About C++
   a. Debugging: Hand Tracing a Program
   b. STL vector, Sorting and Searching vectors
   c. Using Smart Pointers
2. Structured Data
3. Advanced File Operations
4. More About Classes:
   a. C++ string Class
   b. Instance and Static Members;
   c. Friends of Classes;
   d. Memberwise Assignment;
   e. Copy Constructors;
   f. Operator Overloading;
   g. Object Conversion
5. Inheritance, Polymorphism, and Virtual functions
6. Exceptions, Templates, and STL
7. Linked Lists
8. Stacks and Queues
9. Recursion
10. Binary Trees; Search and Sorting Trees
11. Graphs

Course Prerequisite:

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

Textbook:

Required:

Starting out with C++ From Control Structures through Objects, 9th Ed, By Tony Gaddis, Pearson

Supplemental:

Data Structures and Other Objects Using C++, 4th. By Main & Savitch, Addison-Wesley

Learning Management System: CANVAS:

Canvas is used to post announcements, course information, programming assignments, and grade. You will submit your programming assignments on Canvas.

To log-in Reedley College CANVAS:

Username: Your 7-digit student ID number.

Password: If you have not previously changed your password, it is:

First name initial (upper case) + *last name initial* (lowercase) + *date of birth* (mmddyy)

Example: John Smith born on July 9th of 1988 Password =Js070988

Computer Lab:

FEM 3 computer lab is used. Visual C++ compiler is used for this class.

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. Homework should be done on 8.5" by 11" lined paper, stapled on upper left hand corner, with your name and chapter/section number (or program assignment number) written on the upper right hand corner.

Classwork:

There are assignments to be completed during the class time.

Programming Assignments:

Programs are assigned for each chapter. The assignments are posted on CANVAS. For each assignment, 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.

Programming Projects:

There will be additional programming assignments to be completed outside the class lab sessions. Due dates will be indicated on the assignments.

Tests:

There will be a test at the end of every three or four chapters. Each test is **100** points. 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).

Grading:

50% of your final grade points are from the average of test scores.
25% of your final grade points are from the average of program lab assignments.
05% of your final grade points are from the average of classwork assignments.
10% of your final grade points are from the average of chapter homework assignments.
10% of your final grade points are from programming term projects.

Final grade is assigned using following scale:

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

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	Tuesday	01/14/2020
Last day to register	Friday	01/31/2020
Last day to drop this class to avoid a "W"	Friday	02/02/2020
Last date to drop this class	Friday	03/13/2019
Last day of the spring semester	Friday	05/22/2020
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No classes, campus is closed		
Martin Luther Kind, Jr Day	Monday	01/20/2020
Lincoln Day	Monday	02/14/2020
Spring Recess and Good Friday Holiday	Mon - Fri	04/06/2020 – 04/10/2020
Final Exam		

Attendance (Also see Attendance Policy under Academic Regulations in Class Schedule):

Students are expected to attend all class meetings, be on time, and be in class the entire class session. Students, who leave the class before the end of class, consider as being tardy. Your classmates and I would greatly appreciate that you take care of your personal needs (i.e., using the restroom, getting a drink…etc.) before the class begins.

Attendance will be taken at beginning of each class. Two tardiness count as one absence. A student will be dropped from the class if he/she failed 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 will be dropped from this class (6 class meetings). Being absent the day homework/assignment is collected does **not** entitle you to turn in the homework late without penalty!

Student Conduct (Also see Student conduct under Campus Policies in Class Schedule):

Students are expected to conduct themselves in a responsible manner in the classroom. Specific rules and regulations have been established in Board Policy 5410. A copy of this policy is available in the college library, the Admissions Office, the Vice President of Student Services, the Vice President of Instruction's Office, and in the Student Activities Office. Failure to adhere to the accepted standards will result in disciplinary action.

Plagiarism and Cheating Policy (See Cheating and Plagiarism under Campus Policies):

Cheating and plagiarism is prohibited in the class. Incidents of cheating and plagiarism will result a failing grade on the particular examination or assignment in question.

Accommodations

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.