CSCI 40 – Programming Concepts and Methodology I
ENGR 40 – Programming for Scientists and Engineers

SYLLABUS

Schedule No	56003 CSCI 40
	51777 ENGR 40
Class Hours	M W 1:00 p.m. – 2:15 p.m. (Lecture)
	F 1:00 p.m. – 2:50 p.m. (Lab)
Room No	FEM 4E
Instructor	Sharon Wu
Phone	638-3641 ex-3497
Office Hours	Wednesday & Thursday 11:00 am – 11:50 am
	Friday 10:00 am – 10:50 am
	or By appointment
Office	FEM 1D
E-mail	sharon.wu@reedleycollege.edu

Course Objectives:

In the process of completing this course, students will:
   A. Write computer programs using a high level programming language (C Language)
   B. Write computer programs using selection and   repetition control structures
   C. Write computer programs using pointer and array data structures
   D. Write computer programs using functions
   E. Write computer programs to get input from files and write output to files.
   F. Compile and link C programs to create executable programs
   G. Identify and correct   syntax and logical errors in computer programs
   H. Create proper test cases to test computer programs
   I. Write a total of 500 to 1000 lines of programs.

Learning Outcomes:

Upon completion of this course, students will be able to:
   A.   Formulate, represent, and solve problems using a high level programming language.
   B.   Demonstrate knowledge of high level language syntax, control structures, looping, arrays, files, and records.
   C.   Demonstrate proper programming style, debugging and testing techniques.
   D.   Solve application problems in science and engineering.

Course Prerequisite:

Trigonometry (MATH 4A) and eligibility for English 25 and English 26.

Textbook:

Problem Solving and Program Design in C. 6th Edition, By Hanly & Koffman, Pearson Education, Inc.

Blackboard

Blackboard is used to post course information, assignments, and announcements. You also submit your program assignments using Blackboard.

To log-in Reedley College Blackboard:
   User name: your student ID
   Password: (* Be sure to change your password after you login)

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Course Outline:
1. Overview of Computers and Programming: Computer hardware and software; software development method.
2. Overview of C: C language elements; variable declarations and data types; executable statements; general form of a C program; Arithmetic expressions; Formatting numbers in program output.
3. Top-Down Design with Functions: Building programs from existing information; library functions; top-down design and structure charts; function without arguments; functions with input arguments.
4. Selection Structures: if and switch Statements: Control Structures; conditions; the if statement; if statements with compound statements; the switch statement.
5. Repetition and Loop Statements: Repetition in programs; counting loops and the while statement; The for statement; conditional loops; loop design; nested loops; the do-while statement and flag-controlled loops; how to debug and test programs.
6. Modular Programming: Functions with simple output parameters; multiple calls to a function with input/output parameters; scope of names; formal output parameters as actual arguments.
7. Simple data types: Representation and conversion of numeric types and type char; enumerated types; iterative approximations.
8. Array: Declaring and referencing arrays; array subscripts; using for loops for sequential access; using array elements as function arguments; array arguments; searching and sorting an array; multidimensional arrays.
9. Strings: String basics; string library functions: assignment and substrings; concatenation and whole-line input; string comparison; arrays of pointers; character operations.
10. Recursion: The nature of recursion; tracing a recursive function; recursive mathematical functions.
11. Structure and union types: user-defined structure types; structure type data as input and output parameters; functions whose result values are structured.
12. Text File processing: input/output files.

Computer Lab:
Computer lab is in room FEM 4E. Computers (IBM compatible) and HP laser printers are used in this lab. C++ Builder is installed on all PCs. Students need to have a flash memory device for programming assignments.

Homework:
Homework is assigned for each chapter presented in the course.   Homework 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, class name (CSCI 40 / ENGR 40), and chapter number on the upper right hand corner. Being absent the day homework/assignment is collected does **not** entitle you to turn in the homework late without penalty!

Lab Assignments:
Lab assignments are assigned before each lab session. You will complete the lab assignment at end of the 2-hour lab period. Turn in the lab assignment on Blackboard at end of each lab.

Submit your **program** (source code only) and program input/output on Blackboard. Programs are graded using following criteria: **documentation, readability, correctness,** and **test case results**.

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

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Tests:

There is a written test every two or three 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 note).

Grading:

50% of the final grade points are from the average score of all chapter tests.
30% of the final grade points are from the average score of all lab assignments.
10% of the final grade points are from the average score of homework assignments.
10% of the 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 grade is within 1 point (or 1%) of the next higher letter grade, the instructor will award you the next higher letter grade.

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

Attendance will be taken at beginning of each class. Students, who leave the class before the end of class, will be counted as tardy. Two tardiness count as one absence. 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.
Students will 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 (cumulative) will be dropped from this class (**6** classes).

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.

Accommodations for students with disabilities:

If you have a verified need fro 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.

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.

Canceled Class Notification:

Click on "Canceled Class Meetings" on Reedley College webpage (www.reedleycollege.edu) for class cancellations.

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Important Dates:

Class begin	Monday	01/09/2012
Last day to register	Friday	01/27/2012
Last day to change to/from a Pass/No-Pass grading basis	Friday	02/10/2012
Last date to drop	Friday	03/09/2012
No classes:		
Martin Luther King, Jr. Day observed	Monday	01/16/2012
Lincoln Holiday	Friday	02/17/2012
Washington Day observed	Monday	02/20/2012
Spring Recess	Mon – Fri	04/02/2012 – 04/06/2012
Final Exam	**Wednesday**	**05/16/2012** **1:00 pm – 2:50 pm**