CMSC 21: FUNDAMENTALS OF PROGRAMMING

Systematic program development using top-down design; structured programming techniques; programming; programming in the C language; recursion; processing of linked-lists and files; program verification (3 units). Prerequisite: CMSC 11.

COURSE OBJECTIVES

At the end of the course, the student should be able to:

- create well structured programs proficiently in C
- design and implement recursive algorithms;
- use files and pointers in programming, and
- prove the correctness of a program.

COURSE OUTLINE

1. Introduction
   - 1.1 The Program Development Process
   - 1.2 Structured Programming
2. Functions in C
   - 2.1 Parameter Passing
   - 2.2 Recursion
3. Linked Lists
   - 3.1 Singly
   - 3.2 Doubly
   - 3.3 Circular
4. Files
5. Program Correctness

COURSE POLICIES

- Cheating of any form will automatically incur a grade of **5.0** and will be subject to university discipline.
- A student who misses an exam must present a valid excuse slip duly signed by the College Secretary no later than two (2) meetings after he/she has returned to class. He or she will then be given a make-up exam. If no excuse slip is presented after the said time, the student will get a score of zero (0) in that exam.
- No make-up quizzes will be given. For excused cases, the missed quiz will be dropped from the calculation of grades.
- The standard university rules on attendance apply.
- To pass the course, the student should have passing standing in both lecture and laboratory classes.
- All students are required to take the final exam.

GRADING SYSTEM

Laboratory Exercises	30%
Laboratory Project	10%
Lecture Quizzes/Assignments/etc	5%
2 Lecture Exams	35%
Final Exam	20%
TOTAL	**100%**

GRADING SCHEME

95-100	1	70-74	2.25
90-94	1.25	65-69	2.5
85-89	1.5	60-64	2.75
80-84	1.75	55-59	3
75-79	2	< 55	5

SELECTED REFERENCES

Albacea, Eliezer. 2007. Fundamentals of Programming – Problem Solving in C, 3rd ed. UPLB Foundation, Inc.

Forouzan B. A. and R. F. Gilberg. 2007. Computer Science A Structured Programming Approach Using C, 3rd ed. Thomson Learning Asia.

Kernigan, B.W. and D.M Ritchie. 1988. The C Programming Language, 2nd ed. Prentice-Hall, Inc.

Schildt, Herbert. 1992. Turbo C/C++: The Complete Reference, 2nd ed. Osborne McGraw-Hill, CA.