Programming Fundamentals   Fall 2009   Instructor: Qaiser Abbas
Contact: qaiser.abbas@uos.edu.pk   Office hours: Monday: 12:00-3:00PM

OUTLINE

Pre-requisite: None   Credit Hours:4

Objectives: The course is designed to familiarize students with the basic structured programming skills. It emphasizes upon problem analysis, algorithm designing, and programming development and testing.

Reference Books:
1. D.S. Malik, *C++ programming from Problem Analysis to Program Design*, 2002, Course Technology, A division of Thomson Learning, USA. ISBN: 061906213-4
2. Robert Lafore, *The Waite Group's Turbo C Programming for the PC and Turbo C++,* Revised Edition, SAMS, USA, ISBN: 0-672-227371

Week #	Topic	Reference
Week # 1	Overview: Language of Computers, Evolution of Programming Languages, Processing a language program, Programming with problem analysis-coding-execution cycle, Algorithm and problem solving, Development of basic algorithms, Analyzing Problems	Chap 1 of 1
Week # 2	The basic of a program, Data Types, Arithmetic operators and precedence, expressions, Input, Increment & decrement Operators, Output, Designing Solutions, Testing Designed Solutions, Fundamentals Programming Constructs and translation of algorithms to programmes	Chap 2 of 1
Week # 3	Preprocessor Directives, Program style and form, Programming Examples, I/O Streams and Standard I/O Devices, Predefined Functions, Input Failure, Formatting Output	Chap 2,3 of 1
Week # 4	File Input/Output, Programming Examples, Control Structures, Relational Operators, Switch Structure, Assert Function, Programming Examples	Chap 3,4 of 1
Week # 5	Repetition, While Structure, Programming Example, For Structure, Programming Example, Do-while Structure, Programming Example, Break & continue statements, Nested Control Structure	Chap 5 of 1
Week # 6	User defined functions, Standard functions, Value returning functions, Programming Example,	Chap 6 of 1
Week # 7	Void Functions, Value and reference and memory allocations, Reference parameters and value returning functions, scope of an identifier, Side effects of global variable, static and automatic variable, Programming Example	Chap 7 of 1 and Chap 5 of 2
Week # 8	Enumeration Types, Programming Example, Namespace, String Type, Programming Example	Chap 8 of 1

Week # 9	Arrays, C-Strings, Parallel Arrays, Programming Examples	Chap 9 of 1
Week # 10	List Processing, Two and Multidimensional Arrays, Programming Example	Chap 10 of 1
Week # 11	Records, structure variables and functions, array versus structs, nested strcuts, structs in arrays, Programming Example	Chap 12 of 1
Week # 12	Pointer Data Type and Variable, Address of Operator, The difference operator, Structs and Pointer variables, Initializing pointer variable, dynamic variable, operations on pointer variable, dynamic arrays, shallow versus deep copy and pointers	Chap 15 of 1
Week # 13	Detail Discussion on Reserved Words, Operator Precedence, Character Sets	Appendix A, B, C of 1
Week # 14	Detail Discussion on Naming Conventions of header files in ANSI/ISO standard C++ and standard C++, Header files	Appendix E, F of 1
Week # 15	Calculating memory size on a system and Project Presentations	Appendix G of 1
Week # 16	Project Presentations	

Project: Assigned in 3rd week of fall 2009.

Grading:
Project: 10%   - deadline: Week 15
Assignment/Quizes: 10%
Midterm: 30%
Final: 50%

The grades for exams (midterms and final) and other assessments are considered independently for final grade assignment. In order to pass the course you have to score 50% marks in at least one of the exams and must have an overall aggregate of at least 45% marks.

Copying someone else's program or taking someone else's program and modifying it to turn it in as your own is considered plagiarism. Collaborating in any such effort will also be considered an act of cheating. Cheating and plagiarism will not be tolerated and will result in an **F** grade in the course.

Course Location:

All the course material including assignment, quizzes and others will be uploaded on departmental website under link **Qaiser Abbas** in teaching staff section.