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DEREE COLLEGE SYLLABUS FOR:

ITC 2276 C LANGUAGE PROGRAMMING – LEVEL 4.

UK CREDITS: 15

(Updated January 2011.)

PREREQUISITES:	CS 1070 Introduction to Information Systems CS 2188 Introduction to Programming
CATALOG DESCRIPTION:	C language logic and structure; data types; arrays and strings; pointers; file handling; programming and debugging techniques.
RATIONALE:	The module is intended for students, who seek a career in the field of computing. It is intended to provide students with an understanding of the basic elements of the C programming language by analysing several programming techniques. It is an excellent preparation for advanced courses in computing or graduate work in computer science.
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Identify syntax and semantics of C language. 2. Use data structures and program control. 3. Compile and debug C programs. 4. Apply address arithmetic and memory allocation in simple C programs 5. Understand and construct composite data types
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: • Lectures and class discussions. Laboratory practical sessions and programming problem solving. • Office hours held by the instructor to provide further assistance to students. • Use of the online content management system (Blackboard CMS) to further facilitate communication, by posting lecture notes, assignment instruction, announcements, and online submission.

ASSESSMENT:

Summative:

Coursework (programming problems)	**40**
Final Examination (2-hour comprehensive) Combination of short answers and programming problems	**60**

Formative:

Take home assignments and/or in class quizzes	**0**
In-class, 1-hour, "diagnostic" test (programming problems)	**0**

The formative assignments and quizzes aim to prepare students for the examination.
The Coursework tests learning outcomes 1-5
The Final Examination tests learning outcomes 1-2, 4-5

INDICATIVE READING:

REQUIRED READING:
H.H.Cheng: C for Engineers and Scientists.- International Edition McGraw Hill

RECOMMENDED READING:
B.Kernighan, D,Ritchie: The C Programming Language, Prentice-Hall, latest edition

Brian Kernighan, Programming in C- A Tutorial.
Ted Jensen, A tutorial on pointers and arrays in C.

COMMUNICATION REQUIREMENTS:

Daily access to the course's site on the College's Blackboard CMS.
Use of word processing and/or presentation graphics software for documentation of assignments

SOFTWARE REQUIREMENTS:

Microsoft Visual C / C++ or any standard C compiler.

WWW RESOURCES:

http://www.kiourktsoglou.com/c-language.zip
http://www.cprogramming.com/

INDICATIVE CONTENT:

1. Characteristics of C
2. Using Visual C/C++. The debugger
3. Data Types
4. Constants – Escape codes
5. Type definitions
6. Formatted Input / Output
7. Operators
8. Lvalues

9. Conditional and Iterative blocks
10. Functions, header files, function prototypes
11. The pre-processor
12. Storage classes
13. Pointer operators - Address arithmetic
14. Dynamic memory allocation
15. String functions - Memory functions
16. Passing parameters at the Command line
17. Structures
18. Unions
19. Files and devices - File functions
20. Linked lists
21. Binary Trees