C SYLLABUS

1) BASICS

- a) Computer Software.pdf (if student is new with the laptop or computer)
- b) Intro_C.pptx
- c) Algorithms and Flowcharts (Optional)
- d) printf and scanf functions (along with Format Specifiers and Escape Sequence Characters)
- e) Operators (7 types theory + code)
- f) Type Casting:
 - i) Implicit Type Casting
 - ii) Explicit Type Casting

2) CONTROL STATEMENTS

- a) If Else:
 - i) If statement
 - ii) If else Statement
 - iii) If Else if (Ladder if else) Statement
 - iv) Nested If Else Statement
- b) Switch case
- c) Loops:
 - i) For loop
 - ii) While loop
 - iii) Do While loop
 - iv) Patterns
- d) Break statement
- e) Continue statement
- f) Goto statement

3) FUNCTIONS

- a) Functions with No Return Type and with No Arguments
- b) Functions with No Return Type and with Arguments
- c) Functions with Return Type and with No Arguments
- d) Functions with Return Type and with Arguments
- e) Recursion

4) ARRAYS

- a) One-Dimensional Array
- b) Two-Dimensional Array
- c) Array with functions

5) STRINGS

- a) String functions (gets, puts, strlen, strcpy, strcat, strcmp, strrev, strlwr, strupr, strstr, strtok)
- b) Programs of string functions without using string functions

6) POINTERS

- a) Pointer
- b) Arithmetic Pointer
- c) Pointer to Pointer (Double Pointer)
- d) Dangling Pointer
- e) const pointer

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- f) void pointer
- g) null pointer
- h) dereference pointer
- i) function pointer (Function Topic)
- j) function pointer as an argument (Function Topic)
- k) passing an array to a function (Array Topic)
- I) returning array from the function (Array Topic)
- m) Call by Value and Call by Reference (Function topic)

7) DYNAMIC MEMORY

- a) malloc()
- b) calloc()
- c) realloc()
- d) free()

8) STRUCTURE

- a) Basics (Declaration, Initialization and usage)
- b) Structs with function
- c) Array of Structure
- d) Nested Structure
- e) Structure Padding
- f) Union

9) FILE HANDLING

- a) fprintf() and fscanf()
- b) fputc() and fgetc()
- c) fputs() and fgets()
- d) fseek()
- e) frewind()
- f) ftell()
- g) A Small CRUD Based File Handling Program