**Course Code: CSE 1111**

**Course Title: Structured Computer Programming with C**

**Credit Hours: 03.00**

**Course Content:**

**Basic concepts**: concept of real life problem solving by programming and algorithm. Correspondence of manual steps of problem solving with the steps of programming. Programming logic, syntax, and semantics.

**Major activities of programming/algorithm development:** inputting data, processing data, and outputting data; algorithm specification and development, flow charts as tools for algorithm development, statements, pseudocodes. Concept of compiling, linking, running and debugging programs.

**Concept of data, data type:** numeric (whole number and fractional number), character, and pointer. Representation of data by variable, variable naming rules, variable declaration and variable initialization; converting steps of a flow chart to codes (using a programming language).

**Basic structures of structured languages:** sequential, selection, and repetition structures. Applications of the three structures using simple and moderately complicated problems. Programming style and documentation. Program design methodologies: structured and modular program design.

**Programming languages and paradigms:** classification, assembler and translators, source and object codes.

**Functions:** concept of function and parameters; parameter passing methods, scope rules and storage classes; recursion and recursive functions. Header files; preprocessors; pointers, one dimensional array and multidimensional arrays; characters, strings, linked list.

**User defined data types:** structures, unions, and enumerations. Input/Output Handling: standard input and output, formatted input and output; file processing. Variable length argument list; command line parameters; error handling; graphics; linking; library functions etc.

**Required Textbooks:**

1. Wu T Norman Theodore 1997, An introduction to programming, MC-Graw Hill

2. Balagurusamy E., Programming in ANSI C. TATA, MC-Graw Hill

3. Brian K.W. & Ritche D.M, The C Programming language, Prentice-Hall

**Important Links:**

1. <https://www.tutorialspoint.com/cprogramming/index.htm>
2. <https://www.javatpoint.com/c-programming-language-tutorial>
3. <https://www.programiz.com/c-programming>