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| 1. | Title of the course | Introduction to Programming |
| 2. | Course number | ES103M |
| 3. | Structure of credits | 2-0-3-4 |
| 4. | Offered to | UG |
| 5. | New course/modification to | Modification To ES1101/14 |
| 6. | To be offered by | Department of Computer Science and Engineering |
| 7. | To take effect from | July 2022 |
| 8. | Prerequisite | Nil |
| 9. | **Course Objective(s):** To develop computational thinking for problem solving and express a solution in such a way that a computer can effectively execute it. To gain hands-on programming abilities by implementing well-structured programs in C. | |
| 10. | **Course Content:** Computational thinking: problem, pseudocode, flowcharts, variables, statements, programs, phases of program development; Operating environment: shell commands, editor, compiler, debugger; Basics: data types, constants, variables, expressions, operators, operator precedence; Statements: declaration, input/output, compound, conditional, selection, and control statements; Arrays: strings, multidimensional arrays, matrices; Pointers: operators, pointer arithmetic, array manipulation, dynamic memory allocation; Storage classes; Functions: modularity, declaration and definition, arguments, function call, return, recursion; User defined data types: structures, unions; File handling: operations on files. | |
| 11. | **Textbook(s):**<br>1. Deitel H M and Deitel P J, *C: How to Program*, 7th Edition, Prentice Hall India (2014). | |
| 12. | **Reference(s):**<br>1. Bradley A R, *Programming for Engineers*, Springer (2011).<br>2. Dromey R G, *How to Solve it by Computer*, 1st Edition, Pearson Education India (2006).<br>3. Kernighan B and Ritchie D, *The C Programming Language*, 2nd Edition, Prentice Hall (1988). | |