

Course Title	Programming Fundamentals Lab
Course Code	CC-112L
Credit Hours	1
Category	Computing core
Prerequisite	None
Co-Requisite	None
Follow-up	CC-211: Object Oriented Programming, DI-322: Web Technologies
Course Description	Implementation: the concepts studied in “CC-112 Programming Fundamentals”, Flowcharts/Pseudo Codes. Basic C++ Language Constructs: Data types, Variable and Constants, Operator and Expressions, Input and Output (I/O), Formatted I/O, Escape Sequences Decision Making: using if/switch control structure. Repetition: using for and do while. Functions: prototype, parameter and arguments, call by value and call by reference. Library and Header Files. Arrays: Passing Arrays to function, multi-dimensional arrays, searching and sorting. Pointers: pointer definition, pointer arithmetic, constant pointers, pointer and arrays. Dynamic Memory Allocation. User Defined Data Types: structures, definition, initialization, accessing members of structures, typedef, unions. C File Processing: files and streams, Sequential Access File, Random Access File, Secondary Storage I/O. Command Line Arguments.
Text Book(s)	1. Tony Gaddis, Starting out with C++: from control structures through objects, 7th Ed., Addison-Wesley, 2012, ISBN 978-0-13-257625-3
Reference Material	1. D.S. Malik, C++ Programming, From Problem Analysis to Program Design, 5 th Ed., Course Technology, 2011, ISBN: 978-0-538-79813-6 2. Brian W. Kernighan, Dennis M. Ritchie, The C Programming Language, 2 nd Ed., Prentice Hall, 1988, ISBN: 978-0131103627. 3. Bjarne Stroustrup, The C++ Programming Language, 4th Edition, Addison-Wesley, 2013, ISBN 978-0321563842.