NOC:Programming, Data Structures and Algorithms(Aricent) - Video course

COURSE OUTLINE

This is a course on programming, data structures and algorithms. The learner is assumed to have no prior experience of programming, but is expected to be at the level of a second year undergraduate college student in science or engineering. The course will run over ten weeks with about 2-3 hours of lectures per week.

At the end of each week, the learner is expected to write some programs and submit them for grading. These programming problems are classified as easy, moderate or difficult. The easy problems, typically, are repeats from the lecture. The moderate and difficult ones will require increasing levels of initiative from the learner.

In addition, at the end of each week the learner is expected to answer a set of objective-type assessment questions.
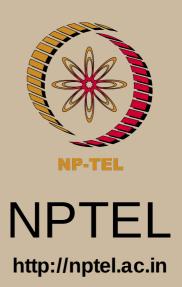
ABOUT ARICENT

Aricent is the world's #1 pure-play product engineering services firm. The company has 20-plus years experience co-creating ambitious products with the leading networking, telecom, software, semiconductor, Internet and industrial companies. The firm's 10,000-plus engineers focus exclusively on software-powered innovation for the connected world.

COURSE DETAIL

List of Topics
- Introduction to Computers and Programming   - Writing your first program   - Variables and operators and expressions   - Variable declarations, more operators, precedence   - Input, Output Statements   - Conditionals   - Loops   - Arrays and Multidimensional arrays   - Pointers

NPTEL

http://nptel.ac.in

Computer Science and Engineering

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- Functions
- Running time of a program
- Computing time complexity
- Polynomial evaluation and multiplication
- Searching: Linear and Binary
- Finding minimum and maximum
- Sorting I: Insertion, Merge
- Sorting II: Counting, Radix
- Finding i-th smallest number
- Structures and User-defined data types
- Brief introduction to C++: Classes and objects
- Data Structures: Abstract Data Type
- Lists
- Stacks: Last In First Out
- Queues: First In First Out
- Trees
- Tree traversal
- Heaps
- Graphs and Representation
- Greedy algorithms
- Dynamic programming
- Matrix Chain Multiplication
- Dijkstra's Algorithm
- Strings
- Boyer-Moore String Matching Algorithm
- File I/O
- Modular Programming