# Shahjalal University of Science and Technology

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| SUST Programming Training Camp 2012 |
| Arranged By |

**SUST ACM LAB**

String Simulation: (3 Days)

**LightOJ**: 1338

**UVa**: 11734, 11541, 401, 353, 11530, 11233, 11743, 11716, 11713, 11362, 11572, 11697, 263, 10010, 10279, 457, 445

**TJU**: 1263, 2522, 1394

Number Theory: (10 days)

* Prime Number Generate (Using Seive Method)
* Primality Test
* Prime Factorization
* Euler Totient Function
* Number of Divisors
* Relative Prime
* Sum Of Divisors(Sigma Function)
* Logarithmic Exponentiation
* Extended GCD Algorithm
* Modular Arithmetic
* Fermat’s Little Theorem
* Chinese Remainder Theorem

Standard Template Library: (1 Day)

* String
* Vector
* Map
* Set
* Algorithm

Graph: (10 Days)

* Graph Representation (List + Matrix)
* BFS
* DFS
* Topological Sort
* Dijkstra Shortest Path
* Floyd Warshall
* BellManFord
* Set Operation
* MST(Kruskal & Prims)
* Strongly Connected Components
* Articulation Point and Bridge, Bi Conn. Comp.
* 2-SAT

DP: (15 Days)

* Standard Problem
* Coin Change
* SubSetSum
* LIS and LCS
* MCM
* Assembly Line Scheduling
* 0-1 Knapsack
* Digit Dp
* String Related DP
* Bit Mask Basic
* BitMask DP
* Counting
* State Space Problem

Geometry: (7 Days)

* Analytical Geometry
* Bisection
* Vector Concept (2D,3D)
* Line Segment Intersection
* Convex Hull

String Algorithm: (3 Days)

* KMP
* Z-Algorithm
* Trie
* Aho-Corasick
* Suffix Array

Advance Data Structure: (10 Days)

* Segment Tree
* Range Minimum Query
* Binary Indexed Tree
* Lowest Common Ancestor