

# UNDERGRADUATE ICT CURRICULUM – 2025

Programming Language	
<b>Structured Programming</b> data types, operators, expressions, control structures, functions, pointers, arrays, strings, file i/O, error handling, graphics, egiachics  North Americon CS programs (MIT, Stanford), ACM/IEEE curriculum	<b>Object Oriented Programmin</b> classes, objects, inheritance, polymorphism, templates, multithreading  North American CS programs ACM/IELE curriculum

Theory		
<b>Discrete Math</b> set theory, relations, functions, propositional calculus, predicate calculus, induction counting. recurrence relations  Rosen's Discrete Mathematics (USA)	<b>Graph Theory</b> graphs, trees, spanning trees, shortest paths, cut-vertices, briges, k-connected graphs  Standard graph theory texts (USA/ Europe), North American CS progms	<b>Theory of Computation</b> DFA, NFA, PDA, Turing Machines, context-free grammars, context free languages  Sipser, introduction to the Theory of Computation (USA)

Data Structures & Algorithms
Arrays, lists, stacks, queues, trees, graphs, heaps, B-trees, Fibonacci heaps, algorithm design techniques, divide & conquer, dynamic programming, greedy, backtracking, branch & bound  CLRS (USA), North American algorithm courses

Database Systems
ERmodel, relational model, SQL, normalization, indexing ( B+-trees, hash lables), transaction management, concurrency.