

SYLLABUS :-

Contents : VLSI design issues for signal processing and communication algorithms. Graphical representation of DSP algorithms, signal flow graph, data flow graph (DFG) and dependence graph (DG), concept of critical path. Retiming, cutset retiming, critical path minimization. Parallel realization by unfolding a DFG, properties of unfolding, retiming for unfolding, bit serial to digit serial and word serial conversions. Area minimization by folding, retiming for folding, folding for delay optimization. Systolic arrays, projection operations on a DG, examples of systolic arrays. Bit level arithmetic structures, efficient multiplier architectures, Booth recoding, CSD, bit serial digital filters, multiplierless realization by distributed arithmetic, redundant arithmetic.