

(0401741) Fault Tolerant Systems (3 credit hours)

Design, modeling, analysis, and integration of hardware and software to achieve dependable computing systems employing on-line fault-tolerance. It covers the concepts and terminologies of Fault-Tolerant System Design including: Reliability, Dependability, Maintainability, Redundancy, Error Detection, Damage Confinement, Error Recovery, Fault Treatment, Redundancy Management, Voting, Information Redundancy, Random Variables, cdf, pdf, Expectation, Bathtub Curve, MTTF, Reliability of Series/Parallel Systems, Stand-by Redundancy, M-of-N System, Reliability Block Diagrams, Fault Trees, Markov Process, Petri Nets, General Stochastic Petri Nets, Recovery Strategies, Roll-back Recovery, Agreement and Consensus, Byzantine Clock Synchronisation, RAID, Fail-Stop Processes, Systems Diagnosis,