Specific to CSE

Artificial Intelligence & Soft Computing : Natural language processing , Machine Learning and Neural Networks, Fuzzy Systems, Pattern Recognition and Text Processing, Intelligent systems and their applications , Intelligent interfaces. Swarm Intelligence ,Genetic Algorithm . Robotics and Kinematics .

System Programming and Principles of Programming languages : Functional and logic programming languages, Theory of programming languages , Programming Environments, Translators for Declarative and Functional Languages, Analysis and implementation of functional and logic programming languages, Automatic Generation of Compilers, Compilers for Non conventional Architectures, Code Optimization, Theory of code optimization; Optimizing and parallelizing compilers , Complexity Theory, Logic in Computer Science, Algorithmic information theory, Computational number theory, Applications of grid Computing

Computer Graphics : Computer Vision and Image Understanding ,Computer aided graphics design, High Performance computing, Visualization; Rendering, Image and video retrieval; motion capture; point based methods ,Virtual Reality

Operating Systems: Processes, Interprocess communication, Memory management, Concurrent processing, synchronization, Scheduling, File systems, Protection and Security, Distributed Operating System. Real time operating System, Network Operating System .

Simulation & Modelling: Statistical independence, Bernoulli Process, Renewal Process, Random Incidence, Markov Modulated Bernoulli Process, Irreducible Finite Chains with Aperiodic States, Discrete-Time Birth-Death Processes, Markov property, Finite Markov Chains, Continuous time Markov chain, Hidden Markov Model. Characteristics of queuing system, poisson's formula, breadth-death system, equilibrium of queuing system, analysis of M/M/1 queues, FSM, Petri-net Model.

Web Engineering :Web Engineering Models, Web Servers , Architecture of browser and search engines, Web Security issues , security audit of websites , web effort estimation , productivity ,Measurement , Quality usability and reliability ,Semantic web, Ontology .XML , HTML , DHTML, SGML .