COMPUTER ENGINEERING DEPARTMENT

PhD Comprehensive Examination Syllabus

June 2021

Research area specific topics

The following is the syllabus for PhD comprehensive examination to be held in the month of June/July 2021.

Sr. No.	Research area specific topics	Content
1	Information Security	Security Attributes, Mechanisms, Attacks. Types of Encryption Mechanisms, Authentication Mechanisms, Access Control Techniques, Designing a Security Protocol, Security Protocols in TCP/IP Protocol Stack. Design of AES, Galois fields and the related mathematics. Types of Privacy and Mechanisms.
2	Image Processing	Image Enhancement, Histogram, Image Filters, Image Transforms: DCT and Fourier Transform, Frequency and Time domain processing, Image Morphological operators
3	Distributed Computing	Scheduling algorithms, Synchronization techniques, Distributed shared memory, Agreement protocols, Deadlock handling mechanisms, Fault tolerance mechanisms
4	Database Management System	Integrity Constrains and Normalization Theory, Indexing and Hashing mechanisms, Query processing and optimization, Concurrency control protocols, Transaction and recovery
5	Data Mining	Data Pre-processing, Classification, Clustering, Association Rule Mining, Multimedia Data Mining