**COURSE OUTCOMES**

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| **M. Tech** | | | | |
|  | M. Tech I Sem | **Information System Security** | CO 1 | Identify and describe fundamental security concepts. |
|  |  |  | CO2 | Explain various cryptographic techniques and the differences between them. |
|  |  |  | CO3 | Interpret different modes of operation for symmetric key algorithms and their applications in real-time communication security. |
|  |  |  | CO4 | Apply encryption and decryption techniques to solve problems related to confidentiality and authentication in practical scenarios. |
|  |  |  | CO5 | Demonstrate the use of Public Key Infrastructure (PKI) by managing digital certificates and private keys, along with understanding the implications of security handshake pitfalls in communication protocols. |
|  | M. Tech I Sem | **Software System Design** | CO 1 | Identify and list the key concepts and techniques relevant to the production of large software systems. |
|  |  |  | CO2 | Explain and describe the principles of top-down design and development in software design. |
|  |  |  | CO3 | Apply object-oriented techniques and design patterns in developing software solutions |
|  |  |  | CO4 | Analyze various testing approaches to ensure software reliability and safety. |
|  |  |  | CO5 | Evaluate software metrics and cost estimation techniques to assess project feasibility and resource management |
|  | M. Tech I Sem | **Advanced Database Management System** | CO 1 | Comprehend the fundamental nature of database security challenges. |
|  |  |  | CO2 | Analyze and design access control mechanisms. |
|  |  |  | CO3 | Understand the principles of query processing and optimization. |
|  |  |  | CO4 | Design databases specifically for decision support applications. |
|  |  |  | CO5 | Gain insights into distributed databases and the challenges they present. |
|  | M. Tech I Sem | **Distributed Operating System** | CO 1 | Identify and describe the key components of a distributed operating system. |
|  |  |  | CO2 | Explain the principles of inter-process communication (IPC) and its importance in distributed systems. |
|  |  |  | CO3 | Discuss the concept of deadlock in synchronization and describe strategies to prevent it. |
|  |  |  | CO4 | Apply synchronization techniques such as semaphores and monitors to solve concurrent programming problems. |
|  |  |  | CO5 | Demonstrate the use of SQL for managing data integrity and implementing security measures in a database system. |
|  | M. Tech II Sem | **Modern Compiler Design** | CO 1 | Identify and list the key components of a compiler |
|  |  |  | CO2 | Explain the purpose of each phase in the compilation process |
|  |  |  | CO3 | Apply their knowledge of parsing techniques by constructing a simple parser for a specified programming language. |
|  |  |  | CO4 | Define key terms related to compiler design such as tokens, grammar, and abstract syntax trees. |
|  |  |  | CO5 | Compare different types of parsing methods |
|  | M. Tech II Sem | **Distributed Algorithms** | CO 1 | List and define key terms and concepts related to distributed algorithms |
|  |  |  | CO2 | Explain the fundamental principles of distributed algorithms |
|  |  |  | CO3 | Compare and contrast different types of distributed algorithms |
|  |  |  | CO4 | Demonstrate the implementation of a basic distributed algorithm |
|  |  |  | CO5 | Solve practical problems using distributed algorithms |
|  | M. Tech II Sem | **Critical System Design** | CO 1 | Identify key concepts and terminology related to critical system design |
|  |  |  | CO2 | Explain the fundamental principles of critical system design |
|  |  |  | CO3 | Apply critical system design principles to develop a simple system mode |
|  |  |  | CO4 | Identify strengths and weaknesses in their design |
|  |  |  | CO5 | Evaluate different critical system design methodologies to determine their effectiveness in solving complex problems. |
|  | M. Tech II Sem | **Advanced Computer Architecture** | CO 1 | Define key concepts and terminology related to computer architecture |
|  |  |  | CO2 | Explain the fundamental principles of computer architecture |
|  |  |  | CO3 | Demonstrate the ability to apply architectural concepts by designing a simple processor architecture |
|  |  |  | CO4 | Summarize the evolution of computer architectures from early designs to modern multi-core processors |
|  |  |  | CO5 | Solve practical problems by optimizing a given code segment for performance |
|  | M. Tech III Sem | **Advanced Real-Time System Design** | CO 1 | **list** key characteristics and definitions related to real-time systems |
|  |  |  | CO2 | **summarize** how timing constraints impact the performance and reliability of real-time systems |
|  |  |  | CO3 | **apply** various scheduling algorithms to design a simple real-time system |
|  |  |  | CO4 | **interpret** and **contrast** hard real-time systems with soft real-time systems |
|  |  |  | CO5 | **demonstrate** their skills by developing a simple real-time application |
|  | M. Tech III Sem | **Advanced Computer Network** | CO 1 | **identify** and **define** key networking concepts |
|  |  |  | CO2 | **explain** the differences between various network topologies |
|  |  |  | CO3 | **demonstrate** the configuration of a basic network using simulation tools |
|  |  |  | CO4 | **list** and **describe** common network security threats and the basic principles of network security measures. |
|  |  |  | CO5 | **summarize** the role of different networking devices |
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