Computer Engineering Syllabus Semester - 5

Topics : Computer engineering
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1. **Advanced Computer Networks:** This course builds upon the foundational knowledge gained in previous semesters and covers advanced topics such as network virtualization, software-defined networking (SDN), network function virtualization (NFV), network simulation, and emerging network technologies.

2. **Distributed Systems:** This course explores the principles and design of distributed systems, including distributed computing models, distributed algorithms, distributed file systems, distributed databases, distributed consensus, and fault tolerance.

3. **Cloud Computing:** This course introduces the concepts, architecture, and services of cloud computing, including Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS), cloud deployment models, cloud security, and cloud application development.

4. **Internet of Things (IoT):** This course covers the principles and applications of the Internet of Things (IoT), including IoT architectures, IoT protocols, IoT sensors and actuators, IoT platforms, IoT security, and IoT applications in various domains.

5. **Machine Learning and Data Mining:** This course introduces the principles and techniques of machine learning and data mining, including supervised learning, unsupervised learning, reinforcement learning, classification, clustering, regression, dimensionality reduction, and association rule mining.

6. **Mobile Computing:** This course focuses on the principles and technologies of mobile computing, including mobile operating systems, mobile application development, mobile networking, location-based services, mobile security, and mobile web development.

7. **Software Testing and Quality Assurance:** Building upon previous coursework, this course covers advanced topics in software testing and quality assurance, including test automation, performance testing, security testing, usability testing, and software quality metrics.

8. **Cybersecurity:** This course provides an in-depth study of cybersecurity principles, threats, vulnerabilities, attacks, defense mechanisms, cryptography, access control, security policies,

incident response, and security management.

9. **Parallel and Distributed Computing:** This course explores the principles and techniques of parallel and distributed computing, including parallel programming models, parallel algorithms, distributed computing paradigms, distributed computing platforms, and performance optimization.

10. **Elective Courses:** Students may have the option to choose elective courses based on their interests and career goals. Elective courses may include topics such as computer vision, natural language processing, big data analytics, software-defined networking, and advanced topics in computer engineering.

11. **Computer Laboratory-V:** This course provides hands-on experience with advanced software tools, technologies, and platforms relevant to computer engineering. Students work on laboratory exercises, projects, and assignments to reinforce theoretical concepts and gain practical skills in software development and system administration.

12. **Project Work (Major Project Continuation):** Students continue to work on their major project, refining the implementation, conducting further experiments, analyzing results, and preparing the final project documentation and presentation.