

Computer Engineering Syllabus Semester - 7

Topics : [Computer engineering](#)

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1. **Advanced Computer Architecture:** This course covers advanced topics in computer architecture, including parallel processing, multi-core processors, GPU architecture, memory hierarchy, cache coherence, and advanced pipelining techniques.
2. **Distributed Systems:** Students learn about the design, implementation, and management of distributed systems, including distributed computing models, distributed algorithms, distributed file systems, distributed databases, and fault tolerance.
3. **Software Engineering Practices:** This course focuses on advanced software engineering practices, including software design patterns, software architecture, software reuse, software metrics, software project management, and agile development methodologies.
4. **Cloud Computing:** Students explore the principles and technologies of cloud computing, including cloud architecture, cloud services (IaaS, PaaS, SaaS), virtualization, cloud security, cloud deployment models, and cloud-based application development.
5. **Internet of Things (IoT) and Embedded Systems:** This course covers the design, development, and deployment of IoT and embedded systems, including IoT architectures, IoT protocols, sensor networks, embedded operating systems, and IoT applications.
6. **Big Data Analytics:** Students learn about big data analytics techniques and tools for processing, analyzing, and interpreting large volumes of data, including data preprocessing, data mining, machine learning algorithms, distributed computing platforms, and real-world applications of big data analytics.
7. **Network Security and Cryptography:** This course focuses on network security principles, cryptographic techniques, and security protocols, including cryptographic algorithms, digital signatures, public-key infrastructure (PKI), secure communication protocols, network security mechanisms, and threat mitigation strategies.
8. **Ethical Hacking and Cybersecurity:** Students learn about ethical hacking techniques, penetration testing methodologies, vulnerability assessment, intrusion detection and prevention systems (IDPS), incident response, and cybersecurity best practices to defend

against cyber threats.

9. **Elective Courses:** Students may have the option to choose elective courses based on their interests and career goals. Elective courses may include specialized topics such as artificial intelligence, machine learning, computer vision, natural language processing, blockchain technology, or other emerging areas in computer engineering.
10. **Project Work:** Students undertake a major project in computer engineering under the guidance of faculty members. The project involves problem identification, literature review, project planning, implementation, testing, and documentation, and provides an opportunity for students to apply their knowledge and skills to solve real-world problems.
11. **Seminar or Technical Presentations:** Students may participate in seminars, workshops, or technical presentations on advanced topics in computer engineering, emerging technologies, or research areas, providing opportunities for knowledge sharing, collaboration, and professional development.

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