

Computer Engineering Syllabus Semester - 3

Topics : [Computer engineering](#)

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1. **Data Communication and Computer Networks:** This course focuses on advanced topics in computer networking, including network protocols, network security, wireless and mobile networks, network performance analysis, and emerging technologies such as Internet of Things (IoT) and cloud computing.
2. **Software Engineering:** This course covers the principles and practices of software engineering, including software development life cycle models, requirements engineering, software design, software testing, software maintenance, and project management techniques. Students learn how to apply systematic methods and tools to develop high-quality software systems.
3. **Microprocessors and Microcontrollers:** This course explores the architecture, programming, and interfacing of microprocessors and microcontrollers. Topics may include instruction set architecture, assembly language programming, memory interfacing, I/O interfacing, interrupts, timers, and serial communication.
4. **Computer Organization and Architecture:** Building on the fundamentals covered in the first semester, this course delves deeper into advanced topics in computer organization and architecture, such as pipelining, memory hierarchy, parallel processing, multiprocessing, and advanced CPU architectures.
5. **Operating Systems:** This course provides an in-depth study of operating system internals and advanced topics in operating system design and implementation. Topics may include process scheduling algorithms, memory management techniques, file system design, device drivers, and virtualization.
6. **Database Management Systems:** Building on the basics covered in the previous semester, this course explores advanced database concepts such as database normalization, query optimization, transaction processing, distributed databases, and NoSQL databases.
7. **Computer Graphics and Visualization:** This course focuses on advanced topics in computer graphics and visualization, including 3D graphics rendering techniques, computer animation, virtual reality, augmented reality, and interactive visualization techniques.

8. **Software Testing and Quality Assurance:** This course covers principles and techniques of software testing, quality assurance, and software reliability engineering. Students learn how to design and implement test cases, perform software testing, and ensure the quality and reliability of software systems.
9. **Embedded Systems:** This course introduces the design and development of embedded systems, including hardware-software co-design, real-time operating systems, embedded system architectures, sensor interfacing, and embedded software development techniques.
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 artificial intelligence, machine learning, cybersecurity, computer vision, parallel and distributed computing, and advanced programming languages.
11. **Computer Laboratory-III:** This course provides hands-on experience with advanced software tools, development environments, and technologies 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 Proposal):** Students begin work on their major project under the guidance of faculty members. The project involves conducting a literature review, defining project requirements, developing a project proposal, and planning the project implementation.