ARYATECHNO

Computer Engineering Syllabus Semester - 6

Topics : Computer engineering
Written on March 06, 2024

1. **Advanced Algorithms:** This course covers advanced algorithms and data structures, focusing on topics such as dynamic programming, greedy algorithms, network flow algorithms, randomized algorithms, approximation algorithms, and advanced graph algorithms.

2. **Artificial Intelligence:** Building upon previous coursework, this course delves deeper into artificial intelligence techniques, including knowledge representation and reasoning, planning, machine learning algorithms, neural networks, deep learning, and natural language processing.

3. **Computer Vision:** This course introduces the principles and techniques of computer vision, including image processing, feature extraction, object detection and recognition, image segmentation, image classification, and applications of computer vision in robotics, healthcare, and security.

4. **Natural Language Processing:** This course focuses on the processing and analysis of human language using computational methods, including text preprocessing, language modeling, part-of-speech tagging, syntactic parsing, sentiment analysis, machine translation, and dialogue systems.

5. **Big Data Analytics:** This course explores techniques for processing, analyzing, and interpreting large volumes of data, including data preprocessing, data mining, machine learning algorithms for big data, distributed computing platforms (e.g., Hadoop, Spark), and real-world applications of big data analytics.

6. **Software Defined Networking (SDN):** This course covers the principles, architecture, and protocols of software-defined networking, including OpenFlow, network virtualization, network programmability, SDN controllers, SDN applications, and the integration of SDN with cloud computing and IoT.

7. **Cyber-Physical Systems:** This course introduces the integration of computing, communication, and control in cyber-physical systems, including embedded systems, real-time systems, sensor networks, actuators, control theory, and applications in smart cities, healthcare, transportation, and industrial automation.

8. **Blockchain Technology:** This course explores the principles, architecture, and applications of blockchain technology, including distributed ledger technology, consensus mechanisms, smart contracts, cryptocurrencies, decentralized applications (DApps), and blockchain use cases in finance, supply chain management, and healthcare.

9. **Elective Courses:** Students may choose elective courses based on their interests and career goals, which may include topics such as advanced topics in computer engineering, entrepreneurship, innovation management, or interdisciplinary subjects from other departments.

10. **Computer Laboratory-VI:** This course provides hands-on experience with advanced software tools, technologies, and platforms relevant to the selected elective courses or specialized areas of study. Students work on laboratory exercises, projects, and assignments to reinforce theoretical concepts and gain practical skills.

11. **Project Work (Major Project Completion):** Students continue and complete their major project, focusing on final implementation, testing, evaluation, documentation, and presentation of the project outcomes. The project showcases the students' ability to apply knowledge and skills acquired throughout the program to solve real-world problems.