

Introduction to Smart Artificial Intelligence

It covers the foundational and advanced concepts of **Artificial Intelligence (AI)** and **Computational Intelligence**, enabling learners to design systems that can think, learn, adapt, and make intelligent decisions. The subject introduces **Intelligent Agents, Search Algorithms (BFS, DFS, A*), Knowledge Representation, and Reasoning**, which form the backbone of problem-solving systems such as Google Search and navigation systems. It further explores **Artificial Neural Networks (ANNs)**, the core technology behind deep learning models used in image recognition, speech assistants, and medical diagnosis systems. The course includes **Fuzzy Logic Systems**, which handle uncertainty and approximate reasoning — widely applied in washing machines, air conditioners, and automated control systems. Advanced topics such as **Genetic Algorithms, Evolutionary Computing, and Swarm Intelligence** demonstrate how optimization and self-adaptive systems are built, inspired by natural processes like biological evolution and ant colony behaviour.

In daily life, these concepts power **face unlock in smartphones, voice assistants like Alexa and Siri, Netflix recommendation systems, traffic prediction in Google Maps, chatbots, fraud detection systems, and smart healthcare monitoring devices**. In the future, Artificial and Computational Intelligence will drive **autonomous vehicles, intelligent robotics, personalized education platforms, smart cities, climate prediction systems, cybersecurity defence mechanisms, and next-generation AI research**. By integrating logical reasoning, adaptive learning, and nature-inspired optimization techniques, this subject transforms learners into AI innovators capable of building intelligent, scalable, and real-world problem-solving systems for the future.