17CS32E3 – INTELLIGENT SOFTWARE AGENTS

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| **Course Category:** | Professional Elective | **Credits:** | 3 |
| **Course Type:** | Theory | **Lecture – Tutorial – Practical:** | 3-0-0 |
| **Prerequisite:** | Need to have knowledge in Artificial Intelligence | **Sessional Evaluation:**  **Univ.Exam Evaluation:**  **Total Marks:** | 40  60  100 |
| **Objectives** | * To learn the principles, architecture, design and roles of software agents | | |

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| **Course Outcomes** | Upon the successful completion of the course, the students will be able to: | |
| CO1 | Learn the fundamental concepts of software agents in Information Society |
| CO2 | Know when multi-agent system is useful |
| CO3 | Understand the security issues in multi-agent systems |
| CO4 | Explore development methods and tools in the design of software agents |
| CO5 | Design applications of Intelligent Software Agents |
| CO6 | Specify how Intelligent Software Agents are useful in real-world |
| **Course Content** | UNIT – I  **Agents as Tools of the Information Society:** On the Way to the Information Society, Tools of the Information Society, Intelligent Software Agents, Economic Potential.  **Fundamental Concepts of Intelligent Software Agents:** Definition of Intelligent Software Agents, Characteristics of Intelligent Software Agents, Classification**.**  UNIT – II  **Base Modules of Agent Systems:** Areas of Influence, Architecture.  **Communication and Cooperation in Multi-Agent Systems:** Introduction, Distributed Problem Solving, Communication, Cooperation Protocols, Negotiations, Matchmaking and Brokering.  UNIT – III  Communication and Cooperation in Multi-Agent Systems:  Learning and Planning in Multi-Agent Systems, Security, Demands Made on the Base Systems-Introduction, Agent Runtime Environment, Middleware, Computer Operating System and Communications System, Development Tendencies- Introduction, Intelligent Agents in Multimedia Environments, Multimedia and Intelligent Agents.  UNIT – IV  Development Methods and Tools: Agent-Oriented Analysis and Design-Object-Oriented Analysis, Agent-Oriented Methods, Agent Languages- Requirements, Java, Telescript, Tcl/ Tk, Safe-Tcl, Agent-Tcl, Component-Based Software Development.  UNIT – V  Application Areas for Intelligent Software Agents: Introduction, Information Retrieval and Filtering: Introduction, Simple Search Engines, Meta Search Engines.  News Watcher: Introduction, Market Overview, PointCast Network, Free Loader, Concepts, Architecture.  Advising and Focusing: Introduction, Market Overview, IBM Web Browser Intelligence, Letizia  UNIT – VI  **Entertainment:** Introduction, Market Overview, Life style Finder, Firefly.  **Groupware:** Introduction, Market Overview, Lotus Notes Mail, MAXIMS, PLEIADES.  **Electronic Commerce:** Introduction, Simple Buying Agents, Complex Buying Agents, Agent-Based Marketplace. Manufacturing. | |
| **Text Books and References:** | **Text Book:**   1. Intelligent software agents: foundations and applications by[Walter Brenner,](http://www.google.co.in/search?tbo=p&tbm=bks&q=+inauthor:%22Walter+Brenner%22) Rüdiger [Zarnekow,](http://www.google.co.in/search?tbo=p&tbm=bks&q=+inauthor:%22R%C3%BCdiger+Zarnekow%22)Hartmut Wittig Springer, 1998.   **Reference Books:**   1. Intelligent Software Agents, Rich ard Murch, Tony Johnson, Prentice Hall, 2000. 2. Software Agents, Bradshaw, MIT Press, 2000. | |
| **E-Resources** | 1. [**https://nptel.ac.in/courses**](https://nptel.ac.in/courses) 2. [**https://freevideolectures.com/university/iitm**](https://freevideolectures.com/university/iitm) | |