|  |  |
| --- | --- |
| **Course Code** | CSU5308 |
| **Level**  | 5 |
| **Course Title** | Artificial Intelligence |
| **Credit value** | 3 |
| **Core/Optional** | Optional |
| **Prerequisites** | (EL/CR in 6 credits from L4 Computer Science courses)(CSU5304)+(CSU5305) (EL/CR ) and EL/CR in 6 credits from L4 Computer Science courses |
| **Hourly breakdown** | **Theory** | **Practical****hours** | **Independent Learning** | **Assessments** | **Total hrs.** |
| 25 Sessions X 2 = **50 hrs.** | 5 DS x 3 hrs. = **15 hrs.** | 1Lab x3 hrs. =**3 hrs.** | * Sessions (25 x 3)

 = 75 hrs.* Online = 3.5 hrs.
* Lab (3 x 0.5) = 1.5

 hrs.Total = **80 hrs.** | * Continuous Assessments (CA) : **01 hr.**
* Practical assessments (PA) : **01 hr.**
 | **150 hrs.** |
| **Course Aim/s.** | To introduce the basic theories and techniques of Artificial Intelligence and develop the programming skills to design models of Artificial Intelligence. |
| **PLOs addressed by course**  | **PLO1: Knowledge:** Explain the fundamental, principles and broader knowledge pertaining to the chosen science disciplines offered for the degree.**PLO2: Practical Knowledge and Application**. Demonstrate the competency to use the knowledge and practical skills appropriately.**PLO5: Creativity and Problem Solving:** Identify and analyze problems using quantitative and/or qualitative approaches using scientific methodology to provide valid conclusions. **PLO8**: **Vision for Life:** Develop the capacity to project for future through identifying self-directed goals and continuously targeting towards them for self-improvement by undertaking further studies. **PLO9: Lifelong Learning**: Develop the capacity to foresee new trends and their impacts and continuously update knowledge and develop skills willingly to meet those future challenges. |
| **Course Learning Outcomes (CLO)** | At the completion of this course student will be able to:CLO1: Identify problems that can be solved using artificial intelligence (AI) techniques, and which AI techniques may be suitable to solve a given problem (PLO1, PLO2, PLO5)CLO2: Identify and describe AI techniques, including search algorithms, agent systems, knowledge representation, and reasoning(PLO2, PLO5)CLO3: Represent knowledge of the real-world using logic(PLO5)CLO4: Design and implement programs in AI language to solve simple problems(PLO8, PLO9) |
| **Content** **(Main topics, sub topics)**  | Introduction, Reasoning, Propositional Logic , First-Order Logic, Definite Logic Programs, Intelligent Agents, The Nature of Environment, The Structure of Agents, Problem-Solving Agents, Example Problems, Searching for Solutions, Uninformed Search Strategies, Avoidance of Repeated States, Informed Search Strategies, Local Search Algorithms, Constraint Satisfaction Problem, Backtracking Search for CSPs, Logical Agents, The Prolog Language, Syntax and Semantics of Prolog Programs, List, Operators and Arithmetic in Prolog, Input and Output, More on Prolog, AI and Prolog , Future Trends in Artificial Intelligence |
| **Teaching Learning methods (TL)** | Self-learning/independent learning of self - study (IL)* Learning the course contents in course materials in print and web-based materials (SS)
* Learning through practical exercises & group work projects (PR) & (GP)
* Additional reading materials/ recommended reading (RE)

Contact sessions* Day schools (discussion sessions) (Non-compulsory)
* Laboratory practical exercises (PR) (compulsory)
 |
| **Assessment strategy** | Overall Continuous Assessment Mark (OCAM): 40% | Final Assessment: 60 % |
| Details: Continuous Assessment (CA) : **01 hr.**  Practical Assessment (PA) : **01 hr.** OCAM computation: OCAM= 60% of best CA/PA + 40% of other CA/PA | Final Evaluation Theory: **02 hrs**. |
| **Recommended** **Readings:** | 1. Russell, S. J., Norvig, P. (2010). *Artificial intelligence: a modern approach*. 3rd ed. Upper Saddle River, NJ: Prentice Hall.
 |