Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Quiz	End Semester Examinations
CO 1	✓		✓	✓
CO 2	✓		✓	✓
CO 3	✓	✓		✓
CO 4		✓		✓

8. INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Discipline	COMPUTER SCIENCE
Course Code	UK1DSCCSC107
Course Title	INTRODUCTION TO ARTIFICIAL INTELLIGENCE
Type of Course	DSC
Semester	I
Academic Level	1 ▪

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4 hours
Pre-requisites	Knowledge in basic concepts about inference and logic is preferred				
Course Summary	This course aims to give students a brief idea about Artificial Intelligence and its associated concepts and applications. Artificial intelligence, or AI, as generally termed, is an umbrella term and refers to the simulation of human intelligence by software-coded heuristics. The ideal characteristic of artificial intelligence is its ability to rationalise and take actions, similar to that of the human mind, that have the best chance of achieving a specific goal.				

Detailed Syllabus:

Module	**Unit**	**Content**	**Hrs (L)**
I	**Part 1: Introduction**		**12**
	1	What is Artificial Intelligence	
	2	Foundations and History of Artificial Intelligence	
	3	Applications of Artificial Intelligence	
	4	Intelligent Agents	
	5	Structure of Intelligent Agents	
	Part 2: Search Strategies		**12**
	6	Introduction to Search	
	7	Searching for solutions	
	8	Uninformed search strategies (Breadth First Search, Depth First Search, Depth Limited Search, Uniform Cost Search)	
	9	Informed search strategies (Best First Search, A*, Hill Climbing)	

	10	Local search algorithms and optimistic problems (Travelling Salesman Problem)	
	11	Adversarial Search (Algorithms not needed)	
	12	Current-best-hypothesis search (only basic concept & list of applications)	
II	**Knowledge Representation & Reasoning**		**12**
	13	Overview of Inference, Propositional & Predicate Logic	
	14	Logical Reasoning	
	15	Forward & Backward Chaining	
	16	Resolution	
	17	AI languages and tools - Lisp, Prolog, CLIPS	
III	**Problem Solving**		**12**
	18	Formulating problems	
	19	Problem Types	
	20	Solving Problems by Searching	
	21	Heuristic search techniques	
	22	Constraint satisfaction problems (Only basic concepts)	
	23	Stochastic search methods (Simulated Annealing, Genetic Algorithms)	
IV	**Learning**		**12**
	24	Overview of different forms of learning	
	25	Decision trees	

	26	Rule-based learning	
	27	Neural networks	
	28	Reinforcement learning	
V		**Flexi Module: Not include in End Semester Exams**	**12**
	29	New features in HTML5 and CSS3,	
	30	Designing a static website of student's choice,	
	31	Case study on some recent web designing tools.	

Text Books

1. Stuart Russell, Peter Norvig, "Artificial Intelligence – A Modern Approach", Pearson Education

References

2. Elaine Rich and Kevin Knight, "Artificial Intelligence", McGraw-Hill publishers.
3. E Charniak and D McDermott, "Introduction to Artificial Intelligence", Pearson Education.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO1	Infer basic ideas about Artificial Intelligence (AI) and Intelligent Agents	U	PSO - 1
CO2	Demonstrate the different searching techniques practised in AI	Ap	PSO - 1, 2, 3
CO3	Summarise knowledge representation and reasoning in the context of AI	U	PSO - 1, 2
CO4	Illustrate AI Problems and different ways of problem solving	Ap	PSO - 1, 2

R-Remember, U-Understand, Ap-Apply, An- Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture(L)/ Tutorial(T)	Practical (P)
1	Infer basic ideas about Artificial Intelligence (AI) and Intelligent Agents	PSO - 1	U	F, C	L	-
2	Demonstrate the different searching techniques practised in AI	PSO - 1, 2, 3	Ap	F, C, P	L	-
3	Summarise knowledge representation and reasoning in the context of AI	PSO - 1, 2	U	F, C	L	-
4	Illustrate AI Problems and different ways of problem solving	PSO - 1, 2	Ap	F, C, P	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PO1	PO2	PO3	PO4	PO 5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CO1	-	-	-	-	-	**2**	**2**	-	**3**	-	-	-
CO2	**2**	**1**	-	**2**	**1**	**2**	**2**	-	**3**	**2**	**1**	-
CO3	**3**	**2**	-	-	-	**2**	**3**	-	**3**	**2**	-	-
CO4	**2**	**3**	-	-	-	**2**	**2**	-	**3**	**2**	-	-