Module Code		Module Title		GPA/NGPA	
CS 3613		Introduction to Artificial Intelligence		GPA	
Hours/Week		Credits	Pre-Requisites / Co-Requisites	Evaluation (%)	
Lecture	Lab/Tutorial			CA	WE
2	2	3	CS2023	40	60

Module Objectives

To provide fundamental knowledge in Intelligent Systems.

Learning Outcomes

After completing this module, the student should be able to;

LO1: Recognize and explain the unique problems that systems with intelligence attempt to solve.
LO2: Explain fundamental techniques and strategies used to create intelligent programs.
LO3: Analyze and select the most efficient and appropriate mechanism applicable to a given problem that can be solved using Artificial Intelligence.

Syllabus Outline	Learning Outcomes
1. **Introduction to Artificial Intelligence [2 hrs]** Fundamental problems in Artificial Intelligence	LO1
2. **Intelligent Agents [2 hrs]** Agents and environments, Concept of Rationality.	LO1
3. **Problem Solving [6 hrs]** Uninformed search strategies, Informed search strategies, Local search algorithms and optimization algorithms, Constraint satisfaction problems	LO2, LO3
4. **Knowledge Representation [6 hrs]** Reasoning and learning - Propositional logic, first order logic and knowledge representation	LO1,LO2, LO3
5. **Planning [2 hrs]** Classical planning, planning and acting in the real world	LO1,LO2, LO3
6. **Uncertain knowledge and reasoning [6 hrs]** Quantifying uncertainty, probabilistic reasoning, making simple decisions	LO1, L02, LO3
7. **Introduction to advanced topics [4 hrs]** Natural language processing, computer vision, robotics, reinforcement learning	LO1, LO2, LO3

Assessments

Learning outcome	Assessment		
	Cont. Assessments		End Semester Examination
	Labs	Other Assessments	
LO1	-	100%	-
LO2	5%	35%	60%
LO3	5%	35%	60%

Tutorials/Continuous Assessments

- **CA / Assignments [28 hrs] - 40%**
  - Assignment 1: Problem solving - 5%
  - Assignment 2: Knowledge, reasoning and planning - 10%
  - Assignment 3: Uncertain knowledge and reasoning - 10%
  - 3 labs/quizzes - 5%
  - 10 minute presentation on a given AI topic / application - Groups of 5 students - 10%

Learning Outcome/Program Outcome Mapping

LO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
LO1	**M**	**M**	**M**	**L**		**L**	**M**	**M**				**M**
LO2	**M**	**M**	**M**	**M**	**H**							**L**
LO3	**H**	**M**	**M**	**H**	**H**	**M**	**M**	**M**	**L**	**L**	**L**	**M**
Module	**M**	**M**	**M**	**M**	**H**	**M**	**M**	**M**	**L**	**L**	**L**	**M**

H – High **M –** Medium **L -** Low

Recommended Text Books/ Other Learning Materials

Text books:

1. Russell, S. and Norvig, P., Artificial Intelligence: a Modern Approach. 4th edition, 2020.

Weekly Plan - CS3613 Introduction to AI

Week	Topics	Responsible
1	Introduction to AI	Sandareka
2	Intelligent Agents	Sandareka
3	Problem Solving by searching	Sandareka
4	Local search and optimization	Sandareka
5	Constraint satisfaction problems	Sandareka
6	Introduction to logical agents	Chathuranga
7	Logical reasoning	Chathuranga
8	Knowledge representation	Chathuranga
9	Planning	Chathuranga
10	Quantifying uncertainty	Thanuja
11	Probabilistic reasoning	Thanuja
12	Making simple decisions	Thanuja
13	Introduction to reinforcement learning and robotics	Thanuja
14	Introduction to NLP and computer vision	Thanuja