SCHEME OFCOURSE WORK

CourseDetails:

Course Title	:Artificial Intelligence		
Course Code	:15CT1121	L T P C	: 3 0 0 3
Program:	: B.Tech		
Specialization:	:Computer Science & Engineering Information Technology		
Semester	:VI		
Prerequisites	:NONE		

CourseOutcomes(COs):

At the end of the course the student will be able to

1	Classify searching strategies for finding solutions.
2	Identify knowledge representation methods for inference.
3	Plan solutions through state space search.
4	Explain uncertainty.

Course outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3										2		
CO2	3	3	2	3									1		
CO3	3	2		3	2								2		
CO4	3	3	3		3								1		
CO5	3	2	2										1		

5	Classifylearningmethods.

CourseOutcomeversusProgramOutcomes:

S-Stronglycorrelated,M-Moderatelycorrelated,Blank-Nocorrelation

AssessmentMethods:	Assignment / Quiz/Seminar/ CaseStudy / Mid-Test /End Exam

Teaching-LearningandEvaluation

Week	Topic/C ontents	CourseO utcomes	SampleQuestions	TeachingLearning Strategy	Assessment Method&Schedule
1	UNIT-I:WhatisAI?,TheFoundationsofArtificialIntelligence,TheHistoryofArtificialIntelligence,AgentsandEnvironments	CO1	1. Discussanythreetypesoftaskenvironmentthatcanbeconsideredwhile solvingaprobl em? 2. Brieflyexplainaboutgoalbasedagentwithitsarchitecture.	=Lecture	Quiz1Mid-1
2	GoodBehavior:TheConceptofRationality,TheNatureofEnvironments,TheStructureofAgents,ProblemSolvingAgents	CO1		=Lecture	Quiz1Mid-1

3	Problem-SolvingAgents,Informed(Heuristic)SearchStrategies,Greedybestfirstsearch,A*sea rch:Minimizingthetotalestimatedsolutioncost	CO1	1. Illustratewithanexampleonhowbreadthfirstsearchwillbeusefulasanuninformedsearchtechniqueforfindingasolutionforagivenproblem. 2. Discussaboutmin-maxalgorithmforsolvinggameproblem.	=Lecture =Working Examples	Quiz-1Mid-1 Assignement1
4	AdversarialSearch,Games,Themini maxalgorithm,Optimaldecisionsinmultiplayergames	CO1		=Lecture	Quiz-1Mid-1 Assignement1
5	Alpha-BetaPruning,Evaluationfunctions,Cuttingoffsearch	CO1		=Lecture	Quiz1Mid-1
6	UNIT-II: KnowledgeBasedAgents, The WumpusWorld,Logic,PropositionalLogic:AVerySimple Logic	CO2	1. Whatisknowledgebase?Describetheknowledgebasedagentinartificialintelli gence. 2. Distinguishbetweenforwardandbackwardchaininginpropositionlogic? 3. DescribevariousstepsinconvertingasentenceintoConjunctiveNormalFormforFirstOrderLogic. 4. Discusstheunificationwithitsalgorithm.	=Lecture =Working Examples	Quiz-1Mid-1 Assignement1
7	Resolution,Forwardandbackwardchaining,Propositionalvs.FirstOrderInference, UnificationandLifting	CO2		=Lecture =Working Examples	Quiz1Mid-1
8	ForwardChaining,BackwardChaining,Resolution	CO2	2.Distinguishbetweenforwardandbackwardchaininginresolution?	=Lecture =Working Examples	Quiz1Mid-1

9	MIDTEST-1

10	UNIT-III:The PlanningProblem,Thelanguageofplanningproblems	CO 3	1. Discusstheplanningdomaindefinitionlanguageforthesparetireproblem? 2. Explaintheconceptofexpressivenessandextensionsforplanning.	=Lecture =Working Examples	Quiz-2Mid-2 Assignment-
11	Expressiveness andextensions,PlanningwithState-SpaceSearch,Forwardstatespacesearch	CO 3		=Lecture	2 Quiz2Mid-2
12	Backwardstatespacesearch, Heuristicsforstatespacesearch	CO 3	1.Distinguishbetweenforwardstatespacesearchandbackwardspacesearchwithanexa mple.	=Lecture	Quiz2Mid-2
13	UNIT-IV:ActingunderUncertainty,BasicProbabilityNotation,TheAxiomsofProbability,	CO 4		=Lecture	Quiz-2Mid-2 Assignment 2
14	InferenceUsingFullJointDistributions,Bayes'RuleandItsUse,RepresentingKnowledgeinanUncertainDomain	CO 4	1. Definethefollowingterms	=Lecture	Quiz2Mid-2

15	TheSemanticsofBayesianNetworks, TimeandUncertainty,InferenceinTemporalModelsHiddenMarkovModels, KalmanFilters,DynamicBayesianNetworks,SpeechRec ognition	CO 4	a) Conditionalprobabilityb)Axiomsofprobabilityc)Independencypropertyd)Margi nalprobability 2. Discussaboutthemethodologyforconstructing Bayesiannetworks? 3. Discussaboutthevariousinferencetaskstobesolvedintemporalmodels. 4. BrieflyexplainHiddenMorkovModel?	=Lecture	Quiz-2Mid-2 Assignment 2
16	UNIT-V:FormsofLearning,InductiveLearning,LearningDecisionTrees,StatisticalLearning	CO 5		=Lecture	Quiz2Mid-2
17	LearningwithCompleteData,LearningwithHiddenVariables:TheEMAlgorithms,InstanceBasedLearning	CO 5	1. Whatislearningandexplaindifferentformsoflearning? 2. Discussaboutdecisiontreelearningalgorithm. 3. BrieflyexplaintheconceptofExpectationMaximizationalgorithm. 4. Discussabouttheinstancebasedlearningalgorithm.	=Lecture =Working Examples	Quiz-2Mid-2 Assignment 2
18	MIDTEST-2				
19/20	ENDEXAM				