TCET

DEPARTMENT OF INFORMATION TECHNOLOGY (IT)

Credit Based Grading Scheme(Revised - 2012) - University of Mumbai

CBGS-2012(R)

Semester Plan

TCET/FRM/IP-02/09 **(Theory)** **Revision: A**

Semester: VII **Course: IT**

Subject (ITC-703): : Intelligent Systems **Class: BE IT -A**

S.No.	Prerequisite/ Bridge course:	Duration (Week /Hrs)	Modes of Learning	Recommended Sources
1	Fundamental of Discrete mathematics, programming in C or Java	6 hours	Self Learning/ Revision	**Textbooks:** 1. Stuart J. Russell and Peter Norvig, "Artificial Intelligence A Modern Approach "Second Edition"Pearson Education. 2. Saroj Kaushik "Artificial Intelligence" , Cengage Learning.

Class Room Teaching

Sr. No	Module No.	Lesson No	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
1	Module 1	L1.1	SOP-Theory,Introduction to Intelligent System	Power point presentation, Chalk & Board	10.7.17		
2	Module 1	L1.2	SOP-Practical	Chalk & Board, Animation	12.7.17		
3	Module 1	L1.3	SOP-OBE	Chalk & Board, Animation	14.7.17		
4	Module 1	L2.1	Introduction to AI, AI Problems	Chalk & Board, Animation	17.7.17	1.7.1	
5	Module 1	L2.2	AI techniques andSolving problems by searching,	Chalk & Board, Animation	17.7.17	1.7.1	
6	Module 1	L1.6	Problem Formulations	Chalk & Board, Animation	18.7.17	1.7.4	
7	Module 1	L2.1	Structure of Intelligent agents	Chalk & Board, Animation	20.7.17	1.7.5	
8	Module 1	L1.1	Types of Agents	Power point presentation, Chalk & Board	21.7.17	1.7.5	
9	Module 1	L1.2	Agent Environments PEAS representation for an Agent	Chalk & Board, Animation	24.7.17	1.7.5	
10	Module 2	L1.3	DFS, BFS , Uniform cost	Chalk & Board, Animation	25.7.19	1.7.6	
11	Module 2	L2.2	Depth Limited Search, Iterative Deepening,	Chalk & Board, Animation	26.7.17	2.1	

12	Module 2		Bidirectional search,Comparing Different Techniques	Chalk & Board, Animation	26.7.17	2.2	
13	Module 2		Game Playing	Power point presentation, Chalk & Board	31.7.17	2.2.2	
14	Module 2		Min Max Search	Chalk & Board, Animation	1.8.17	2.2.3	
15	Module 2		Alpha Beta Pruning	Chalk & Board, Animation	2.8.17	2.3	
16	Module 3		Heuristic functions,Hill Climbing	Chalk & Board, Animation	2.8.17	3.3	
17	Module 3		Simulated Annealing,Best First Search	Chalk & Board, Animation	7.8.17	3.4	
18	Module 3		A*, IDA*	Power point presentation, Chalk & Board	8.8.17	3.4.1	
19	Module 3		Crypto- Arithmetic Problem	Chalk & Board, Animation	9.8.17	3.4.2	
20	Module 3		Backtracking for CSP	Chalk & Board, Animation	9.8.17	3.4.3	
21	Module 3		SMA*	Chalk & Board, Animation	14.8.17	3.4.4	
22	Module 3		Performance Evaluation	Chalk & Board, Animation	16.8.17	3.5	
23	Module 4		A Knowledge Based Agent	Power point presentation, Chalk & Board	16.8.17	4.1	
24	Module 4		WUMPUS WORLD Environment	Chalk & Board, Animation	30.8.17	4.1.1	
25	Module 4		Propositional Logic	Chalk & Board, Animation	30.8.17	4.1.2	
26	Module 4		First Order Predicate Logic	Chalk & Board, Animation	4.9.17	4.1.2	
27	Module 4		Forward and Backward Chaining	Chalk & Board, Animation	5.9.17	4.1.3	
28	Module 4		Resolution	Power point presentation, Chalk & Board	6.9.17	4.2	
29	Module 4		Introduction to PROLOG, PROLOG Programming	Chalk & Board, Animation	6.9.17	4.2.1	

30	Module 5		Introduction to Planning, Planning with State Space Search	Chalk & Board, Animation	11.9.17	5.1	
31	Module 5		Partial Ordered planning	Chalk & Board, Animation	12.9.17	5.2	
32	Module 5		Hierarchical Planning	Chalk & Board, Animation	13.9.17	5.2.1	
33	Module 5		Conditional Planning, Planning with Operators.	Chalk & Board, Animation	13.9.17	5.2.2	
35	Module 5		Learning from Observation	Chalk & Board, Animation	18.9.17	5.2.2	
36	Module 5		General Model of Learning Agents,Inductive Learning	Chalk & Board, Animation	19.9.17	5.2.2	
37	Module 5		Learning Decision Trees ,rote Learning	Chalk & Board, Animation	20.9.17	5.3	
38	Module 5		Learning by Advice,Learning in Problem Solving	Chalk & Board, Animation	20.9.17	5.3	
39	Module 5		Explanation based Learning	Chalk & Board, Animation	25.9.17	5.3	
40	Module 6		Uncertainly, Representing Knowledge in an Uncertain Domain	Power point presentation, Chalk & Board	26.9.17	6.1.1	
41	Module 6		Conditional Probability	Chalk & Board, Animation	3.10.17	6.2	
42	Module 6		Joint Probability	Chalk & Board, Animation	4.10.17	6.2	
43	Module 6		Bays theorem	Chalk & Board, Animation	4.10.17	6.2.1	
44	Module 6		Belief Networks	Chalk & Board, Animation	7.10.17	6.2.3	
45	Module 6		Simple Inference in Belief Networks	Chalk & Board, Animation	16.10.17	6.3	
46	Module 6		Representing and using Domain Knowledge	Power point presentation, Chalk & Board	17.10.17	6.4	
47	Module 6		Expert System-shell	Chalk & Board, Animation	18.10.17	6.4.1	
48	Module 6		Explanation, Knowledge Acquisition	Chalk & Board, Animation	18.10.17	6.4.2	
Remark:		Syllabus Coverage:		Practice Session: -		**Content Beyond Syllabus:** Natural Language Programming case studies	
Course:							
No. of (lectures planned)/(lecture taken): 48							

Advanced course: AI: Search Methods for problem solving	12 Hours	Online NPTEL videos with Hands on Training in Laboratory	**Web sources:** 1. NPTEL-https://onlinecourses.nptel.ac.in 2. www.tutorialpoint.com1. Instructor's study material, **Textbook reference:** 1.Stuart J. Russell and Peter Norvig, "Artificial Intelligence A Modern Approach "Second Edition"

Text Books:

1. Stuart J. Russell and Peter Norvig, "Artificial Intelligence A Modern Approach "Second Edition" Pearson Education.
2. Saroj Kaushik "Artificial Intelligence" , Cengage Learning.
3. George F Luger "Artificial Intelligence" Low Price Edition , Pearson Education., Fourth edition.

Reference Books:

1.Ivan Bratko "PROLOG Programming for Artificial Intelligence", Pearson Education, Third Edition.
2. Elaine Rich and Kevin Knight "Artificial Intelligence" Third Edition
3. Davis E.Goldberg, "Genetic Algorithms: Search, Optimization and Machine Learning", Addison Wesley, N.Y., 1989.
4. Hagan, Demuth, Beale, "Neural Network Design" CENGAGE Learning, India Edition.

Digital Reference:

3.1 www.nptel.ac.in

3.2 www.tutorialpoint.com

SD/-	SD/-	SD/-
Name & Signature of Faculty	Signature of HOD	Signature of Principal/Dean (Academics)
Mrs. Shruti Mathur	Dr. Rajesh Bansode	
Date:	Date:	Date:

Note:

1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.
3. Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
4. According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non –digital/ digital sources can be written (if applicable)
7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.