



# NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

## DEPARTMENT OF COMPUTER APPLICATIONS

COURSE PLAN – PART I			
Name of the programme and specialization	MCA , Computer Applications		
Course Title	Software Agents		
Course Code	CA7B3	No. of Credits	3
Course Code of Pre-requisite subject(s)	CA7A4		
Session	July, 2019	Section (if, applicable)	
Name of Faculty	Dr. B. RAMADOSS	Department	Computer Applications
Official Email	brama@nitt.edu	Telephone No.	0431-2503735
Name of Course Coordinator(s) (if, applicable)	Dr.B.Janet		
Official E-mail	janet@nitt.edu	Telephone No.	
Course Type (please tick appropriately)	<input type="checkbox"/> Core course	<input checked="" type="checkbox"/> Elective course	
<b>Syllabus (approved in BoS)</b>			
<p>Agent and user experience: Interacting with Agents - Agent from Direct Manipulation to Delegation - Interface Agent Metaphor with Character - Designing Agents - Direct Manipulation versus Agent Path to Predictable</p> <p>Agents for Learning in Intelligent Assistance: Agents for Information Sharing and Coordination - Agents that Reduce Work Information Overhead - Agents without Programming Language - Life like Computer character - S/W Agents for cooperative Learning</p> <p>Architecture of Intelligent Agents - Agent communication and collaboration: Overview of Agent Oriented Programming - Agent Communication Language - Agent Based Framework of Interoperability</p> <p>Agent Architecture: Agents for Information Gathering - Open Agent Architecture - Communicative Action for Artificial Agent</p> <p>Mobile agents and advanced concepts: Mobile Agent Paradigm - Mobile Agent Concepts - Mobile Agent Technology - Case Study: Tele Script, Agent Tel – Emerging Agent Technologies.</p> <p><b>REFERENCES:</b></p> <ol style="list-style-type: none"> <li>1. Jeffrey M.Bradshaw," Software Agents ", MIT Press, 2000.</li> <li>2. William R. Cockayne, Michael Zyda, "Mobile Agents", Prentice Hall, 1998</li> <li>3. Russel&amp;Norvig, " Artificial Intelligence: A Modern Approach ", Prentice Hall, 2nd Edition,2002</li> <li>4. Joseph P.Bigus&amp; Jennifer Bigus, "Constructing Intelligent agents with Java: A Programmer's Guide to Smarter Applications ", Wiley, 1997.</li> </ol>			
<b>COURSE OBJECTIVES</b>			
<ul style="list-style-type: none"> <li>• To learn the concepts (basic to advanced levels) of agent technologies and their</li> </ul>			



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applications in developing complex software systems.	
<b>MAPPING OF COs with POs</b>	
<b>Course Outcomes</b>	<b>Programme Outcomes (PO)</b>
Define the concepts and issues of agent technology.	1,7
Explain the architecture of agent technology.	1, 3, 5, 8
Describe communication processes involved in agent technology.	1,5
Apply the concepts of mobile agents.	1,3,5

### COURSE PLAN – PART II

#### COURSE OVERVIEW

Future software will not merely respond to requests for information, but will anticipate the user's needs and actively seek ways to support the user. These systems will also manage cooperation among distributed programs. To describe the many roles of such software, researchers use the term agent. The essays in Software Agents, by leading researchers and developers of agent-based systems, address both the state-of-the-art of agent technology and its likely evolution in the near future. This course present the views of proponents and a critic of software agents. This course describe how agents are used to enhance learning and provide intelligent assistance to users in situations where traditional direct manipulation interfaces alone are insufficient. This course discuss agent-to-agent communication and the use of agents to provide intelligent interoperability in distributed systems and the Internet.

#### COURSE TEACHING AND LEARNING ACTIVITIES

S.N o.	Week/Contact Hours	Topic	Mode of Delivery
1.	Week 1/ 3hrs	Introduction to Software Agent	Chalk and Talk, PPT
2.		Agent and user experience: Interacting with Agents	Chalk and Talk, PPT
3.		Agent from Direct Manipulation to Delegation and Interface Agent Metaphor with Character	Chalk and Talk, PPT
4.	Week 2/ 3hrs	Designing Agents	Chalk and Talk, PPT
5.		Direct Manipulation versus Agent Path to Predictable	Chalk and Talk, PPT
6.		Agents for Learning in Intelligent Assistance: Agents for Information Sharing and Coordination	Chalk and Talk, PPT
7.	Week 3/ 3hrs	Agents that Reduce Work Information Overhead	Chalk and Talk, PPT



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8.		Agents without Programming Language	Chalk and Talk, PPT
9.		Life like Computer character	Chalk and Talk, PPT
10.	Week 4/ 4hrs	S/W Agents for cooperative Learning	Chalk and Talk, PPT
11.		Architecture of Intelligent Agents	Chalk and Talk, PPT
12.		Agent communication and collaboration: Overview	Chalk and Talk, PPT
13.		Overview of Agent Oriented Programming	Chalk and Talk, PPT
14.	Week 5/ 3hrs	Agent Communication Language	Chalk and Talk, PPT
15.		Agent Based Framework of Interoperability	Chalk and Talk, PPT
16.		Agent Architecture	Chalk and Talk, PPT
17.	Week 6/ 3hrs	Agents for Information Gathering	Chalk and Talk, PPT
18.		Open Agent Architecture	Chalk and Talk, PPT
19.		Communicative Action for Artificial Agent	Chalk and Talk, PPT
20.	Week 7/ 3hrs	Mobile agents	Chalk and Talk, PPT
21.		Mobile agents and advanced concepts	Chalk and Talk, PPT
22.		Mobile Agent Paradigm	Chalk and Talk, PPT
23.	Week 8/ 3hrs	Mobile Agent Concepts	Chalk and Talk, PPT
24.		Mobile Agent Technology	Chalk and Talk, PPT
25.		Summary of Mobile Agents	Chalk and Talk, PPT
26.	Week9/ 3hrs	Overview of case studies	Chalk and Talk, PPT
27.		Case Study: Tele Script	Chalk and Talk, PPT
28.		Case Study: Agent Tel	Chalk and Talk, PPT
29.	Week10/ 3hrs	Emerging Agent Technologies	Chalk and Talk, PPT
30.		Software Agent Revision	Chalk and Talk, PPT
31.		Summary	Chalk and Talk, PPT



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<b>COURSE ASSESSMENT METHODS</b> (shall range from 4 to 6)				
S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Cycle Test 1	As per schedule	60 mins	20
2	Cycle Test 2	As per schedule	60 mins	20
3	Assignment	7 <sup>th</sup> to 10 <sup>th</sup> week	-	10
CPA	Compensation Assessment*	12 <sup>th</sup> week	120 mins	40
4	End Semester Exam	As per schedule	180	50
<b>COURSE EXIT SURVEY</b> (mention the ways in which the feedback about the course shall be assessed)				
<ul style="list-style-type: none"><li>➤ The students through the class representative may give their feedback at any time to the course chairman which will be duly addressed.</li><li>➤ The students may also give their feedback during class committee meeting.</li><li>➤ Course Outcome Survey' form will be distributed on the last working day to all the students and the feedback on various rubrics will be analyzed.</li><li>➤ The COs will be computed after arriving at the final marks.</li></ul>				
<b>COURSE POLICY</b> (including compensation assessment to be specified)				
Students who are all absent for both the cycle test for a genuine reason may be given CPA and it will cover the portion of cycle test 1 and 2.				
<b>ATTENDANCE POLICY</b> (A uniform attendance policy as specified below shall be followed)				
<ul style="list-style-type: none"><li>➤ At least 75% attendance in each course is mandatory.</li><li>➤ A maximum of 10% shall be allowed under On Duty (OD) category.</li><li>➤ Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.</li></ul>				
<b>ACADEMIC DISHONESTY &amp; PLAGIARISM</b>				
<ul style="list-style-type: none"><li>➤ Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.</li></ul>				



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- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.
- The above policy against academic dishonesty shall be applicable for all the programmes.

### ADDITIONAL INFORMATION, IF ANY

The students can get their doubts clarified at any time with their faculty member with prior appointment

### FOR APPROVAL

*B. Nannadurai*

Course Faculty

*Q. Nannadurai*

CC- Chairperson

*S.R. Balasubramanian*

HOD