



ASSAM SCIENCE AND TECHNOLOGY UNIVERSITY

Guwahati

Course Structure and Syllabus

Bachelor of Computer Applications (BCA)

6th Semester



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Bachelor of Computer Applications (BCA)

6th Semester: Course Structure

Sl.No.	Subject Code	Subject Name	L	T	P	C	Marks	
Theory							CE	ESE
1	BCA17160E2*	Elective – II	3	2	0	4	30	70
2	BCA17160E3*	Elective – III	3	2	0	4	30	70
Practical								
1	BCA171621	Major Project	-	-	-	15	30	70
TOTAL			6	4	0	23	90	210
Total Contact Hrs: 10; Total Credit: 23								

Elective-II Subjects (Any One)		
Sl. No.	Subject Code	Subjects
1	BCA17160E21	Artificial Intelligence
2	BCA17160E2*	Any Other Subject offered from time to time with the approval of the University

Elective-III Subjects (Any One)		
Sl. No.	Subject Code	Subjects
1	BCA17160E31	Distributed System
2	BCA17160E3*	Any Other Subject offered from time to time with the approval of the University

Paper Code : BCA17160E21
Paper Name : Artificial Intelligence
L-T-P-C : 3-2-0-4

UNIT	PARA	CONTENT	WEEK
1		Introduction to Artificial Intelligence: Aim and scope of the artificial intelligence, Problem Solving- Formulating problems, problem types, states and operators, state space, search strategies.	2
2		Problem solving techniques: Generate and test, hill climbing, search problem reduction techniques, heuristics search techniques and heuristic problem solving, A* algorithm.	3
3		Game playing: And or graph search, game trees and associated techniques, mini-max problem and alpha beta pruning.	2
4		Knowledge representation: Representation, Inference, Propositional Logic, predicate logic (first order logic), Normal Forms (CNF & DNF), logical reasoning, Inference chains, resolution, forward chaining, backward chaining.	4
5		Expert system: Characteristics of Expert Systems, Components of Expert Systems, examples of expert systems MYCIN & DENDRAL), Applications of Expert systems.	2
6		Machine Learning & Natural Language Processing: Types of learning Models, Regression, Classification. NLP Phases, Components of NLP, Steps in NLP	2

Books: 1. Artificial Intelligence by Elaine Rich, Kevin Knight, Knight Kevin, TMGH
 2. Artificial Intelligence: A Modern Approach Textbook by Peter Norvig and Stuart J. Russell

Paper Code : BCA17160E31
Paper Name : Distributed System
L-T-P-C : 3-2-0-4

Unit	Para	Content	Week
1		Introduction: Introduction to Distributed systems-examples of distributed systems, Goals and challenges-, Heterogeneity of distributed system. Distributed system architectural models-fundamental models –Client server and peer to peer ,Variations of client server architecture(Proxy server, Thin client, Mobile agent)	3
2		Process Synchronization: Introduction to time and global states -Clocks, Events and Process states -Synchronizing physical clocks -Logical time and logical clocks -Global states ,Cut in a distributed system.	3
3		Distributed mutual exclusion: Requirement of mutual exclusion,Ricart Agarwala Algorithm,Maekow’s Voting algorithm	2
4		Election Algorithm: Requirement of election algorithm, Bully’s algorithm	2
5		Termination Detection: Objective, Huang’s Algorithm	1
6		Transaction and Concurrency Control –Introduction to distributed transactions -Flat and nested distributed transactions -Atomic commit protocols -Concurrency control in distributed transactions -Distributed deadlocks –Edge chasing algorithm	3
Books	1	George Koulouris, Jean Dollimore, Tim Kindberg “Distributed Systems Concepts and Design” Third Edition –2002-Pearson Education Asia.	
	2	2. Principle and paradigms, Distributed System by Tanenbaum,PHI	

Paper Code : BCA171621
Paper Name : Major Project
L-T-P-C : 0-0-0-15

UNIT	PARA	Content	Weeks
1		System Development Project.(Windows, Web Based, Mobile Application Development)	15
