

**GOAPAL KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY**  
**GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764 005**

**LESSON PLAN**

**SESSION:2025-26**

**SUBJECT: SOFT COMPUTING CODE:PCP7H010**

**FACULTY NAME: AMOD KUMAR BAGH**

Module	Class	SUBJECT DETAILS	Durattion	12hours
1	1	Soft Computing : Introduction of soft computing	1 hr	
	2	soft computing vs. hard computing, various types of soft computing techniques	1 hr	
	3	Applications of soft computing.	1 hr	
	4	Artificial Intelligence : Introduction, Various types of production systems	1 hr	
	5	characteristics of production systems, breadth first search	1 hr	
	6	depth first search techniques, other Search Techniques like hill Climbing	1 hr	
	7	Best first Search, A* algorithm	1 hr	
	8	AO* Algorithms and various types of control Strategies.	1 hr	
	9	Knowledge representation issues, Prepositional and predicate logic	1 hr	
	10	monotonic and non monotonic reasoning, forward Reasoning, backward reasoning	1 hr	
	11	Weak & Strong Slot & filler structures, NLP	1 hr	
	12	Neural Network : Structure and Function of a single neuron Biological neuron, artificial neuron definition of ANN, Taxonomy of neural net	1 hr	
2	1	Difference between ANN and human brain, characteristics and applications of ANN	1 hr	12hours
	2	single layer network, Perceptron training algorithm	1 hr	
	3	Linear separability, Widrow & Hebb;s learning rule/Delta rule	1 hr	
	4	ADALINE, MADALINE	1 hr	
	5	AI v/s ANN, Introduction of MLP	1 hr	
	6	different activation functions, Error back propagation algorithm	1 hr	
	7	derivation of BBPA, momentum, limitation,	1 hr	

		characteristics and application of EBPA		
	8	Counter propagation network, architecture	1 hr	
	9	functioning & characteristics of counter Propagation network	1 hr	
	10	Hopfield/ Recurrent network, configuration, stability constraints	1 hr	
	11	Associative memory, and characteristics, limitations and applications	1 hr	
	12	Hopfield v/s Boltzman machine.	1 hr	
	13	Adaptive Resonance Theory: Architecture, classifications,	1 hr	
		Implementation and training. Associative Memory.		
3	1	Fuzzy Logic: Fuzzy set theory	1 hr	8hours
	2	Fuzzy set versus crisp set, Crisp relation & fuzzy relations	1 hr	
	3	Fuzzy systems: crisp logic, fuzzy logic	1 hr	
	4	introduction & features of membership functions	1 hr	
	5	Fuzzy rule base system : fuzzy propositions	1 hr	
	6	formation, decomposition & aggregation of fuzzy rules	1 hr	
	7	fuzzy reasoning, fuzzy inference systems		
4	1	fuzzy decision making & Applications of fuzzy logic	1 hr	6Hours
	2	Genetic algorithm : Fundamentals	1 hr	
	3	basic concepts, working principle	1 hr	
	4	encoding, fitness function, reproduction	1 hr	
	5	Genetic modeling: Inheritance operator	1 hr	
	6	cross over, inversion & deletion, mutation operator	1 hr	
	7	Bitwise operator, Generational Cycle	1 hr	
	8	Convergence of GA, Applications & advances in GA	1 hr	
	9	Differences & similarities between GA & other traditional methods	1 hr	
	10	Soft Computing : Introduction of soft computing	1 hr	
		soft computing vs. hard computing, various types of soft computing techniques		
5	1	Applications of soft computing.	1 hr	7HOURS
	2	Artificial Intelligence : Introduction, Various types of production systems	1 hr	
	3	characteristics of production systems, breadth first search	1 hr	
	4	depth first search techniques, other Search	1 hr	

		Techniques like hill Climbing		
	5	Best first Search, A* algorithm	1 hr	
	6	AO* Algorithms and various types of control Strategies.	1 hr	
	7	Knowledge representation issues, Propositional and predicate logic	1 hr	
	8	monotonic and non monotonic reasoning, forward Reasoning, backward reasoning	1 hr	