

SOFT AND EVOLUTIONARY COMPUTING [As per Choice Based Credit System (CBCS) scheme] (Effective from the academic year 2016 -2017) SEMESTER – VII			
Subject Code	15CS751	IA Marks	20
Number of Lecture Hours/Week	3	Exam Marks	80
Total Number of Lecture Hours	40	Exam Hours	03
CREDITS – 03			
Course objectives: This course will enable students to <ul style="list-style-type: none"> Familiarize with the basic concept of soft computing and intelligent systems Compare with various intelligent systems Analyze the various soft computing techniques 			
Module – 1			Teaching Hours
Introduction to soft computing: ANN, FS,GA, SI, ES, Comparing among intelligent systems ANN: introduction, biological inspiration, BNN&ANN, classification, first Generation NN, perceptron, illustrative problems Text Book 1: Chapter1: 1.1-1.8, Chapter2: 2.1-2.6			8 Hours
Module – 2			Teaching Hours
Adaline, Medaline, ANN: (2 nd generation), introduction, BPN, KNN,HNN, BAM, RBF,SVM and illustrative problems Text Book 1: Chapter2: 3.1,3.2,3.3,3.6,3.7,3.10,3.11			8 Hours
Module – 3			Teaching Hours
Fuzzy logic: introduction, human learning ability, undecidability, probability theory, classical set and fuzzy set, fuzzy set operations, fuzzy relations, fuzzy compositions, natural language and fuzzy interpretations, structure of fuzzy inference system, illustrative problems Text Book 1: Chapter 5			8 Hours
Module – 4			Teaching Hours
Introduction to GA, GA, procedures, working of GA, GA applications, applicability, evolutionary programming, working of EP, GA based Machine learning classifier system, illustrative problems Text Book 1: Chapter 7			8 Hours
Module – 5			Teaching Hours
Swarm Intelligent system: Introduction, Background of SI, Ant colony system Working of ACO, Particle swarm Intelligence(PSO). Text Book 1: 8.1-8.4, 8.7			8 Hours
Course outcomes: The students should be able to: <ul style="list-style-type: none"> Understand soft computing techniques Apply the learned techniques to solve realistic problems Differentiate soft computing with hard computing techniques 			
Question paper pattern: The question paper will have ten questions. There will be 2 questions from each module. Each question will have questions covering all the topics under a module. The students will have to answer 5 full questions, selecting one full question from each module.			

Text Books:
1. Soft computing : N. P Padhy and S P Simon , Oxford University Press 2015
Reference Books:
1. Principles of Soft Computing, Shivanandam, Deepa S. N Wiley India, ISBN 13: 2011

University Updates