



**STANLEY**  
**COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN**  
( Approved by AICTE , New Delhi | Affiliated to Osmania University ,Hyderabad )  
Address : Chapel Road, Abids ,Hyderabad

**SE-512**

## **SOFT COMPUTING**

### **UNIT-I**

#### **Introduction to Soft Computing and Neural Networks:**

Evolution of Computing Soft Computing Constituents From Conventional AI to Computational Intelligence-Machine Learning Basics.

### **UNIT II**

#### **Genetic Algorithms:**

Introduction to Genetic Algorithms (GA) –Applications of GA in Machine Learning-Machine Learning Approach to Knowledge Acquisition.

### **UNIT III**

#### **Neural networks:**

Machine Learning Using Neural Network, Adaptive Networks –Feed forward Networks – Supervised Learning Neural Networks–Radial Basis Function Networks-Reinforcement Learning– Unsupervised Learning Neural Networks–Adaptive Resonance architectures – Advances in Neural networks.

### **UNIT IV**

#### **Fuzzy Logic:**

Fuzzy Sets –Operations on Fuzzy Sets –Fuzzy Relations –Membership Functions-Fuzzy Rules and Fuzzy Reasoning –Fuzzy Inference Systems –Fuzzy Expert Systems –Fuzzy Decision Making.

### **UNIT V**

#### **Neuro-Fuzzy Modeling:**

Adaptive neuro-Fuzzy Inference Systems – Coactive Neuro-Fuzzy Modeling – Classification and Regression Trees – Data Clustering Algorithms – Rule base Structure Identification – Neuro-Fuzzy Control – Case studies.

**Suggested Reading:**

1. Jyh-Shing Roger Jang, Chuen-Tsai Sun, Eiji Mizutani, "*Neuro-Fuzzy and Soft Computing*", Prentice-Hall of India, 2003.
2. George J. Klir and Bo Yuan, "*Fuzzy Sets and Fuzzy Logic-*

SCEETM