

LESSON PLAN
VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY
BURLA, SAMBALPUR, ODISHA, 768018
DEPARTMENT OF ELECTRICAL ENGINEERING & E.E.E.
2016-17 SYLLABUS OF SOFT COMPUTING (EE/EEE) (3-1-0)

FACULTY: SASMITA BEHERA

SEMESTER-EVEN(8TH)

PERIOD(S)	MODULE NO. & TOPIC TO BE COVERED	Remarks
MODULE-I		
1	Introduction to Neuro, Fuzzy and Soft Computing	
2	Fuzzy Sets : Basic Definition and Terminology	
3	Fuzzy Set-theoretic Operations	
4	Member Function Formulation and Parameterization	
5	Fuzzy Rules and Fuzzy Reasoning, Extension Principle and Fuzzy Relations	
6	Fuzzy If-Then Rules, Fuzzy Reasoning	
7	Fuzzy Inference Systems, Mamdani Fuzzy Models	
8	Sugeno Fuzzy Models, Tsukamoto Fuzzy Models	
9	Input Space Partitioning and Fuzzy Modeling discussion of a practical example	
10	Tutorial	
MODULE-II		
11	Neural networks: Architecture, Single layer networks	
12	Perceptrons: Adaline, Multilayer Perceptrons Supervised Learning	
13	Back-propagation, LM Method	
14	Radial Basis Function Networks	
15	Unsupervised Learning Neural Networks, Competitive Learning Networks	
16	Kohonen Self-Organizing Networks	
17	Learning Vector Quantization, Hebbian Learning, Recurrent neural networks	
18	Adaptive neuro-fuzzy information; systems (ANFIS), Hybrid Learning Algorithm	
19	Applications to control and pattern recognition	
20	Tutorial	
MODULE-III		
21	Derivative-free Optimization Genetic algorithms: Basic concepts	
22	Encoding	
23	Fitness function	
24	Reproduction	
25	Differences of GA and traditional optimization methods	
26	Basic genetic programming concepts	
27	Basic genetic algorithm discussion of pseudo code	
28	Basic genetic programming concepts, effect of parameters	
29	Limitations & Applications	
30	Tutorial	
MODULE-IV		
31	Evolutionary Computing- introduction	
32	Classification	
33	Simulated Annealing,	
34	Random Search,	
35	Downhill Simplex Search,	
36	Swarm optimization	
37	PSO features & pseudo code	
38	ACO, ABC, BFO features	
39	Applications	
40	Tutorial	