

**Maulana Abul Kalam Azad University of Technology, West Bengal**  
*(Formerly West Bengal University of Technology)*  
**Syllabus for B. Tech in Applied Electronics and Instrumentation Engineering (AEIE)**  
 (Applicable from the academic session 2018-2019)

<b>Course Code: OE-EI 604</b>	<b>Category: Open Elective Courses -III</b>
<b>Course Name: Soft Computing Techniques</b>	<b>Semester: Sixth</b>
<b>L-T-P: 3-0-0</b>	<b>Credit: 3</b>
<b>Total Lectures: 45</b>	
<b>Pre-Requisite:</b>	

**Course Content:**

<b>Module No.</b>	<b>Description of Topic</b>	<b>Contact Hrs.</b>
1	Introduction to Soft-computing, Its Constituent components, Fuzzy Sets, General Idea and importance in practical life, definition,	7
2	Basic Operators, T- Norms, S- Norms, other aggregation operators, Fuzzy relations, implications, extensions, projections and compositions	6
3	Approximate reasoning, compositional rule of inference, rule based systems, term set, Fuzzification, reasoning, defuzzification	7
4	Different Fuzzy models (MA/TS), Applications of Fuzzy rule based systems	6
5	Basics of Genetic Algorithm, its adaptation for computing, Application	10
6	Studies of some Fuzzy-neural, Neuro-fuzzy and Fuzzy-GA systems	9

**Learning Resources**

**Text books:**

1. Dirankov and Hellendrom Fuzzy logic control, Narosa
2. Rajsekhar and Pai, Neural Networks, Fuzzy logic and Genetic Algorithm: Synthetic and Applications, Pearson Education
3. Goldberg - Genetic algorithm, Pearson 2003
4. Freeman - Neural Networks, Pearson 2003
5. Jang - Neuro-fuzzy and soft Computing, Pearson 2003