



PimpriChinchwad Education Trust's  
**PimpriChinchwad College of Engineering**  
Sector No. 26, Pradhikaran,  
Nigdi, Pune – 411 044



## COURSE OUTLINE

Department: AS&H

A.Y.:2022-23 SEM-II

Date:27th Feb,2023.

Class: S.Y. B. Tech [All programs]

Name of the Course: **Neural Networks and Fuzzy Logic**

### Relevance of the course:

Neural networks can help computers make intelligent decisions with limited human assistance. They are good for Pattern Recognition, Classification and Optimization. This includes handwriting recognition, face recognition, speech recognition, text translation, credit card fraud detection, medical diagnosis and solutions for huge amounts of data.

Whereas Fuzzy logic can deal with information arising from computational perception and cognition, that is, uncertain, imprecise, vague, partially true, or without sharp boundaries. Fuzzy logic allows for the inclusion of vague human assessments in computing problems. This course requires basic knowledge of following courses:

- Linear Algebra and Univariate calculus
- Multivariate calculus
- Applied Mathematics

### Course Outcomes:

CO No	CO Statement	No. of Lectures Planned	Content Delivery method	Assessment tools Planned
1	Model a Neural Network using feed forward network	6	PPT, chalk and board, Quiz, Group Discussion	MTE, ETE
2	Apply back propagation and feedback networks to study on real time data	6	PPT, chalk and board, Quiz, Group Discussion	MTE, ETE
3	Understand basic operators, packages, syntax of software and implementation of an artificial neural network using the NN simulation toolbox.	6	PPT, Videos, Demonstration	Task submission
4	Apply concepts of fuzzy logics in Fuzzification and Defuzzification	6	PPT, chalk and board, Quiz, Group Discussion	MTE
5	Apply fuzzy logic control in Pattern recognition and Home Heating system.	6	PPT, chalk and board, Quiz, Group Discussion	MTE
6	Implement Fuzzy Logic Toolbox in fuzzy logic control.	6	PPT, Videos, Demonstration	Task submission

**Internal Evaluation:**

<b>Tools</b>	<b>Assessment tools with tentative dates</b> ( <i>Quizzes, mini project, research paper based assignment etc.</i> )	<b>Marks</b>	<b>Mapped COs</b>
<b>IE1</b>	Open Ended Activity: Task submission using Software programming on real life applications/problems related to application of ANN to given data	10	CO3
<b>IE2</b>	Open Ended Activity: Task submission using Software programming on real life applications/problems related to	10	CO6

**Course Faculty SY OE-NFL (Div-B, G)**

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