

**Topic: Foundation of Machine Learning.**

**Faculty Name: Sudeshna Sarkar, IIT-Kharagpur**

**Department: Computer Science & Engineering Department**

**Relevant Semester** : 3<sup>rd</sup> & higher

**Relevant Course** : Machine Learning

**Pre-Requisite** : A course on probability and Statistics is preferable.

**Course Description & Outline** :

- Introduction to supervised learning -- classification and regression.
- Features, Hypothesis space.
- Underfitting and overfitting
- Inductive Bias, The Bias-Variance tradeoff and decomposition
- Feature Selection, Dimensionality Reduction
- Learnability: Basic introduction to Computational Learning Theory, VC dimension.