

# GUJARAT TECHNOLOGICAL UNIVERSITY

M.E

## Communication Engineering

Subject Name: **Machine Learning**

Sr.No	Course content
1	Introduction to Machine Learning, and Statistical Pattern Recognition.
2	Supervised learning: generative/discriminative learning, parametric/non-parametric learning, neural networks, support vector machines
3	Unsupervised learning: Clustering, Dimensionality reduction, Kernel methods, learning theory (bias/variance tradeoffs; VC theory; large margins); Reinforcement learning: Dynamic programming, Adaptive control. Recent applications of machine learning: Robotic control, Data mining, Autonomous navigation, Bioinformatics, Speech recognition, and Text and web data processing.

### Reference Books:

1. Christopher Bishop, Pattern Recognition and Machine Learning. Springer, 2006.
2. Richard Duda, Peter Hart and David Stork, Pattern Classification, 2nd ed. John Wiley & Sons, 2001.
3. Tom Mitchell, Machine Learning. McGraw-Hill, 1997.
4. Richard Sutton and Andrew Barto, Reinforcement Learning: An introduction. MIT Press, 1998