Matrix Theory:

Instructor: DR. Lakshmi Prasad Natarajan

Resources:

1. https://youtube.com/playlist?list=PLE7DDD91010BC51F8&si=AEVWXqmc1Cll8LZB

2. https://home.cs.colorado.edu/~alko5368/lecturesCSCI2820/mathbook.pdf

3. https://vmls-book.stanford.edu/vmls.pdf

4.https://youtube.com/playlist?list=PLZHQObOWTQDPD3MizzM2xVFitgF8hE_ab&si=uhYU3pHXdhpaVBmx

Probability and Stochastic Processes:

Instructor: DR. P. N. Karthik

Resources:

1. https://youtube.com/playlist?list=PLbMVogVj5nJQqGHrpAloTec_lOKsG-foc&si=IuXVN--Ch8-8jPeF

2. https://youtube.com/playlist?list=PLo4jXE-LdDTS5BYqea-LcHdtjKwVcepP7&feature=shared

3.http://old-eclass.uop.gr/modules/document/file.php/TST244/%5BGeoffrey_R._Grimmett%2C_David_R._Stirzaker%5D_Probabi(BookZZ.org).pdf

4.http://drhuang.com/science/mathematics/book/GTM95.Probability%20%E6%A6%82%E7%8E%87%E8%AE%BA%EF%BC%88%E8%8B%B1%E6%96%87%E7%AC%AC%E4%BA%8C%E7%89%88)-A.N.Shiryaev.pdf

Foundations of Machine Learning :

Instructor: DR. Vineeth N Balasubramanian

Resources:

1	Introduction to Machine Learning, IIT Madras
2	MIT 6.036 Introduction to Machine Learning, Fall 2020
3	Stanford CS229: Machine Learning by Andrew Ng Autumn 2018
4	CORNELL CS4780 "Machine Learning for Intelligent Systems"
5	Machine Learning Course CalTech- CS 156
6	Machine Learning Specialization (Stanford) Coursera
	Books
	Pattern Recognition and Machine Learning By Christopher Bishop
	The Elements of Statistical Learning: Data Mining, Inference, and Prediction
	Probabilistic Machine Learning: An Introduction By Kevin Murphy
	MATHEMATICS FOR MACHINE LEARNING
	Probabilistic Machine Learning: Advanced Topics By Kevin Murphy
	"Machine Learning" by Tom M. Mitchell

Advanced Data Structures and Algorithms :

Instructor: DR. Rogers Mathew

Resources: https://youtube.com/playlist?list=PL-vNL7L9mKtUbxWBmCGXEDepJYKGe6cSS&si=pHApi7KwEbYtp_WC

Convex Optimization (Not in 1st Semester, but recommended to Know) :

https://youtube.com/playlist?list=PLMmTBP3nE-rTOd0xHFqKZT7aJEuq-wPi6&si=w2felRo1Di6oYaKo