

EE 830 Adaptive Control (3-0)

Textbook: Adaptive Control by Karl J. Astrom and Bjorn Wittenmark, 2nd Edition, 1994.

ISBN-10: 0201558661, ISBN-13: 978-0201558661

Reference Book: Introduction to Stochastic Control Theory by Karl J. Astrom, Dover Publications, 2006. ISBN-10: 0486445313, ISBN-13: 978-0486445311.

Objective:

The objective of this course is to provide the students with a good perspective of adaptive techniques, an active knowledge of the key approaches in adaptive control and a good sense of when adaptive techniques can be used and when other methods are more appropriate.

Pre-Requisite:

EE 826 Linear Control Systems (or equivalent)

Course Outcome:

The students graduating from this course are expected to gain insight into a wide range of techniques used in the field of adaptive control as well as their practical applications. **Course Outline:**

Topics	Allocated Periods
Introduction to Adaptive Control Real Time Parameter Estimation Deterministic Self Tuning Regulators Stochastic and Predictive Self Tuning Regulators Model-Reference Adaptive Systems	45
Properties of Adaptive Systems Auto-Tuning Gain Scheduling Commercial Product and Applications	