332:506 Control Theory I I – Fall 2007

Instructor: Dr. V. Gajic, ELE 204, tel: 445-5015, email: vericag@ece.rutgers.edu

Class time: W 6:30-9:20pm. The class time may be changed at the request of students.

Office hours: W after the class and by appointment.

Textbook: A. Sinha, *Linear Systems: Optimal and Robust Control*, Taylor & Francis (CRC Press), 2007.

Course to be covered:
Review of the state space technique
Controllability and observability concepts
Observers for linear system
Optimal controllers for linear deterministic systems
Linear stochastic systems
Kalman filter
Optimal controllers for linear stochastic systems
H_2-optimization and robust control
H_∞-optimization and robust control
Introduction to nonlinear control and extended Kalman filter
Introduction to dynamic game theory and optimization

Homework will be assigned weekly with the solutions distributed a week later. Exams will be based on problems similar to homework and theoretical questions covered in class.

Grading:
Midterm Exam 40%
Design Project using either MATLAB or LabVIEW 20%
Final Exam 40%