

EEE 302 Control Theory & Systems

Basic concepts and examples of control systems; mathematical models of control components/systems such as servo motors, valves, transducers, error detectors, electrical systems, thermal systems, and pneumatic systems. Open and closed loop control systems; Block diagrams and signal flow graphs; PID (three term controller) tuning; transient and steady state response, Synchro- transmitters and receivers. Feedback, Time response analysis, concept of stability, Field-controlled and armature-controlled dc motors. Routh- Hurwitz criterion; Root - locus techniques, frequency – response analysis, polar and Bode plots, Nyquist stability criteria. Nicholas chart, use of MATLAB, compensation techniques chart, compensation techniques, introduction to non- linear systems.