Department of Electrical & Electronic Engineering
Electrical Engineering Section

CONTROL ENGINEERING EE 303

Year: THIRD

Theoretical : 2 hrs/Week
Tutorial : 1hrs/Week

Mathematical Modeling of Systems **6 Hrs.**

Differential equations, Laplace methods of analysis of electrical and mechanical systems.

Transfer Functions **6 Hrs.**

Gain and phase, transient and steady state response, time domain design specifications. Block diagrams, application to electrical and mechanical systems.

Frequency Response **6 Hrs.**

Bode plot and polar plot, frequency domain design specifications.

Open and Closed Loop Systems **4 Hrs**.

Feedback systems, frequency response, operational amplifiers.

Servomechanisms **6 Hrs**.

Position control systems, error analysis.

Stability **8 Hrs.**

Stable and unstable control systems, Nyquist stability criteria, gain and phase margin, stability on Bode diagrams, root locus.

Compensation **6 Hrs.**

Lag and lead compensation, three term controller.

Analogue Computer Simulation **6 Hrs.**

Analogue computers, solution of differential equations.

Digital Computer Simulation **6 Hrs**.

Computer analysis of transfer functions, time domain responses.

Sampled Data Systems **6 Hrs.**

Method of analysis, transfer functions, stability.

Recommended Textbooks : K.Ogata
Modern Control Engineering
Prentice - Hall Pub.