Course Name: Control System I LAB

Course Code : EE693

Course Credit: 2

Contact Hour: 3P

Prerequisite: MATLAB/ SIMULINK

Course Objective

The course objectives are:

1. To make students familiar with digital and non linear control system toolbox and basic commands.
2. To make students accustomed with software based control technique, design & analysis.
3. To make them feel the features of computer based control in terms of : user friendly, accuracy, reliability, easy to edit.

Course Outcome

On completion of the course students will be able to

1. Analyze complex MIMO system using SV analysis.
2. Design compensators to perform a specific task.
3. Construct model of non linear systems and able to analyze system performance.
4. Design digital controllers and able to analyze system performance in discrete domain.
5. Understand effect of parameter variation on step response of a digital system.

CO Mapping with departmental POs

H: High, M: Medium, L: Low

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1		H	M	L	H							
CO 2	H	H	H	H	M							
CO 3	H	M	H	H	M							
CO 4	H	H	H	H	M							
CO 5	H	M	H	H	H							

Course Content:

The following experiments are included in the course:

1. Obtain Transfer Function of a given system from State Variable model and vice versa.
2. State variable analysis of a physical system - obtain step response for the system by simulation.
3. Determination of Z transform, inverse Z transform & pole zero map of a discrete system.
4. Study the effect of controller parameter variation on step response of a digital system.
5. Study the design of LEAD compensator to meet desired response of a continuous system.
6. Study the design of LAG compensator to meet desired response of a continuous system.
7. Study the design of LEAD - LAG compensator to meet desired response of a continuous system.