Control System & Simulation Lab

List of Major Equipments:-

1) Order 0,1,2 system
2) Lead-Lag Compensator
3) Open loop state feedback controller
4) Close loop state feedback controller
5) Analog PID Trainer
6) Digital PID Demonstrator with PC interface

List of Laboratory Experiments:-

1) Feedback Control System (ISC 402)
Experiments:

1. To study time response of Type 0, 1, 2 systems.
2. To study the effect of time constant on performance of 1st order system.
3. To study the effect of damping factor on the performance of second order system.
4. To study time response of Second order under damped systems. Calculate time response specifications.
5. To study the frequency response of First and Second order systems.
6. Atleast four experiments should be performed using simulation software like MATH CAD/MATLAB/SCILAB/OCTAVE or equivalent.

2) Control System Design (ISC 503)
Experiments:

1. Design of Lead Compensator in Time domain.

2. Design of Lag Compensator in Time domain.

3. Design of Lag-Lead Compensator in Time domain.

4. Design of Lead Compensator in Frequency domain.

5. Design of Lag Compensator in Frequency domain.

6. Design of Lag-Lead Compensator in Frequency domain.

7. Design of PID in Time domain.

8. Design of PID in Frequency domain.

9. Design of state feedback controller in state space using pole placement.

10. Verification of controllability and observability.