

EC– 506 Software Lab-III

Study of simulation software (any one Scilab/ MatLab etc.)

Introduction to Scilab / Matab, Study of Scilab / Matlab programming environment, Modeling, Design and development of Programs.

Overview and Study of the key features and applications of the software.

Application of the software in the field of Control Systems, Data Communications and Communication Systems.

1. Programs Related to Control System- open-loop and closed loop control system, frequency response plots, determining transient response, specifications of second order system, effect of PID controller on control system, Bode plot, Nyquist plot and Root Locus plot, state space analysis.

2. Programs Related to Communication Systems--Simulation of a Communication System (Generation, addition of noise and Detection), AM, FM, PM, PAM, PCM, PSK, FSK etc.

3. Programs related to Data Communications- simulations of CRC, LRC, VRC, hamming codes, line encoding techniques.

References:

1. Rudra Pratap: Getting Started with MATLAB, Oxford University Press.
2. <http://www.scilab.in>
3. <http://ekalavya.it.iitb.ac.in/contents.do?topic=Scilab>
4. Vinu V. Das: Programming in Scilab, New Age Publisher.
5. Chapman Stephen J.: MATLAB Programming for Engineers, Thomson Cengage
6. Proakis: Contemporary Communication System Using MATLAB; Thomson Cengage.
7. Kuo: Automatic Control Systems, PHI Learning.
8. Singh and Chaudhari: Matlab Programming, PHI Learning