ANURAG ENGINEERING COLLEGE
(An Autonomous Institution)

II Year B.Tech, ECE-I SEM   **L   T/P/D**
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(EC308PC) BASIC SIMULATION LAB

Prerequisites: Signals & Systems, Mathematics and PTSP

NOTE: Minimum 12 Experiments to be conducted

Simulate the following programs using MATLAB/ LABVIEW or equivalent software tools:

1. Basic operation on matrices.

2. Generation on various signals and Sequences (periodic), such as unit impulse, unit step, square, saw tooth, triangular, sinusoidal, ramp, Sinc.

3. Operation on signal and sequence such as addition, multiplication scaling, folding, computation of energy and average power.

4. Finding the event and odd parts of signals/sequence and real and imaginary part of signals.

5. Convolution between signals and sequences.

6. Auto correlation and cross correlation between signals and sequences.

7. Verification of linearity and time invariance properties of a given continues /discrete system.

8. Computation of unit sample, unit step and sinusoidal response of the given LTI system and verifying its physical Realization and stability properties.

9. Gibbs phenomenon.

10. Finding the Fourier transform of a given signal and plotting its magnitude and phase spectrum.

11. Waveform synthesis using Laplace transforms.

12. Locating the zeros and poles and plotting the pole zero maps in s-plane and z-plane for the given transfer function.

13. Generation of Gaussian Noise (real and complex), computation of its mean, M.S. Value and its skew, kurtosis, and PSD, probability distribution function.

14. Sampling theorem verification.

15. Removal of noise by auto correlation/ cross correlation.

16. Extraction of periodic signal masked by noise using correlation.

17. Verification of Weiner-Khinchine relations.

18. Checking a random process for stationary in wide sense.