



Department of Electronics and Communication Engineering

BASIC SIMULATION LABORATORY

II B.Tech I Semester

Course Code: A223482

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COURSE OUTCOMES:

After going through this course the student will be able to:

1. Evaluate the operation on signals and systems using arithmetic operations and transforms
2. Application of correlation and transforms on noise removal and signal extraction
3. Compute various statistical properties of a random noise and verify whether it is stationary
4. Determine the correlation & Convolution between Signals and sequences.
5. Validate the properties and waveform synthesis of various transforms

Minimum 10 experiments to be Simulated Using MATLAB:

1. Generation of various signals and sequences (Periodic and A periodic), such as Unit Impulse, Unit step, square, saw tooth, Triangular, Sinusoidal, Ramp, Sync.
2. Operations on Signals and Sequences such as Addition, multiplication, scaling, Shifting, Folding, computation of Energy and average power.
3. Finding the Even and Odd parts of Signal/sequence and Real and imaginary parts of signal.
4. Convolution between signals and sequences.
5. Auto correlation and cross correlation between signals and sequences.
6. Verification of Linearity and Time Invariance Properties of a given continuous/Discrete system.
7. Gibbs Phenomenon.
8. Finding the Fourier Transform of a given signal and plotting its magnitude and phase spectrum.
9. Waveform synthesis using Laplace Transform.
10. Locating the Zeros and Poles and plotting the Pole-Zero maps in S plane and Z-plane for the given transfer function.
11. Generation of Guassian noise (Real and complex), Computation of its mean, M.S. value and its Skew, Kurtosis, and PSD, probability distribution function.
12. Sampling Theorem Verification.