**Lesson Plan**

**Name of Faculty :** POONAM, Assistant Professor

**Discipline :**  ECE

**Semester:**  3rd

**Subject :**  SIGNALS & SYSTEM (PCC-ECE201-T)

**Lesson Plan Duration:** 15 weeks

Work Load (Lectutre/Practical) per week (in hours):Lectures-03

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| **Week** | **Theory** | | **Actual Covered** |
| **Lecture Day** | **Topic (Including Assignment/Test)** |  |
| 1st | 1 | Signal definition, classification of signals |  |
| 2 | basic/singularity continuous and discrete-time signals |  |
| 3 | basic operations: time shifting, time reversal |  |
| 2nd | 4 | time scaling on signals, |  |
| 5 | signal representation in terms of singular functions |  |
| 6 | correlation of signals and its properties |  |
| 3rd | 7 | Representation of a continuous-time signal by its samples: the sampling theorem, reconstruction, aliasing. |  |
| 8 | system, classification of systems: linear & nonlinear systems |  |
| 9 | static & dynamic systems, causal & non-causal system |  |
| 4th | 10 | Invertible & noninvertible |  |
| 11 | stable & unstable system |  |
| 12 | Time variant & time invariant systems with examples |  |
| 5th | 13 | Linear time-invariant systems: definition and properties |  |
| 14 | Impulse respons |  |
| 15 | convolution sum/integral and its properties |  |
| 6th | 16 | Representation of lti systems using differential and difference equations. |  |
| 17 | Numericals |  |
| 18 | Introduction to Frequency domain Representation |  |
| 7th |  | ----------------------------**Ist Minor Test**--------------------------- |  |
| 8th | 19 | Fourier Series Representation of Periodic Signal . |  |
| 20 | Convergence of Fourier Series |  |
| 21 | Examples of FT |  |
| 9th | 22 | Assignment questions |  |
| 23 | Properties of Fourier Series |  |
| 24 | Examples of FT using Properties |  |
| 10th | 25 | Fourier Transform for periodic and Aperiodic signals |  |
| 26 | Convergence of Fourier Transform |  |
| 27 | Properties of Fourier Transform |  |
| 11th | 28 | Applications of Fourier Transform |  |
| 29 | Fourier Transform representation for Discrete–Time Aperiodic & Periodic Signals |  |
| 30 | Properties of Discrete-Time Fourier Transform, Basic Fourier Transform Pairs |  |
| 12th | 31 | Introduction to Z-Transform, Region of Convergence (ROC) for Z-Transform |  |
| 32 | Z-Transform Propertie |  |
| 33 | Examples oF ZT |  |
| 13th | 34 | Inverse Z-Transform |  |
| 35 | Question on Inverse Z-Transform |  |
| 36 | Analysis of LTI Systems Using Z-Transform |  |
| 14th |  | ----------------------------**2nd Minor Test**--------------------------- |  |
| 15th | 37 | Application of z transform |  |
| 38 | Introduction to Hilbert Transform |  |
| 39 | Problems Solving |  |