**LESSON PLAN**

**Subject Code & Name: 13EC2004 - Signals & systems**

**Branch: E.C.E-C Class / Semester: II/I Academic Year:2015-16**

**Faculty: V.Laxmi**

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| **Period** | **Date (Tentative)** | **Topic** | **Unit No.** | **Teaching Methodology** | **Remarks** | **Corrective action upon review** |
|  |  | **Signal Analysis** | **I** |  |  |  |
| 1 | 04.08.15 | Introduction |  | CB |  |  |
| 2 | 06.08.15 | Introduction to signals and systems |  | CB |  |  |
| 3 | 06.08.15 | classification of signals |  | CB |  |  |
| 4 | 07.08.15 | classification of systems |  | CB |  |  |
| 5 | 11.08.15 | classification of systems |  | CB |  |  |
| 6 | 13.08.15 | analogy between vectors and signals |  | CB |  |  |
| 7 | 13.08.15 | orthogonal signal space |  | CB |  |  |
| 8 | 14.08.15 | signal approximation using orthogonal functions |  | CB |  |  |
| 9 | 18.08.15 | mean square error |  | CB |  |  |
| 10 | 20.08.15 | closed or complete set of orthogonal functions |  | CB |  |  |
| 11 | 20.08.15 | orthogonality in complex functions |  | CB |  |  |
| 12 | 21.08.15 | exponential and sinusoidal signals |  | CB |  |  |
| 13 | 25.08.15 | properties of elementary signals |  | CB |  |  |
| 14 | 27.08.15 | properties of elementary signals |  | CB |  |  |
| 15 | 27.08.15 | Basic operations on signals |  | CB |  |  |
|  |  | **Fourier Series & Fourier Transform** | **II** |  |  |  |
| 16 | 28.08.15 | Representation of Fourier series |  | CB |  |  |
| 17 | 01.09.15 | continuous time periodic signals |  | CB |  |  |
| 18 | 03.09.15 | properties of Fourier series |  | CB |  |  |
| 19 | 03.09.15 | properties of Fourier series |  | CB |  |  |
| 20 | 04.09.15 | Dirichlet’s conditions |  | CB |  |  |
| 21 | 08.09.15 | Trigonometric Fourier series |  | CB |  |  |
| 22 | 15.09.15 | exponential Fourier series |  | CB |  |  |
| 23 | 17.09.15 | Complex Fourier spectrum. |  | CB |  |  |
| 24 | 17.09.15 | Deriving Fourier transform from Fourier series |  | CB |  |  |
| 25 | 18.09.15 | Fourier transform of arbitrary signals |  | CB |  |  |
| 26 | 22.09.15 | Fourier transform of arbitrary signals |  | CB |  |  |
| 27 | 24.09.15 | Fourier transform of standard signals |  | CB |  |  |
| 28 | 24.09.15 | properties of Fourier transforms |  | CB |  |  |
| 29 | 25.09.15 | properties of Fourier transforms |  | CB |  |  |
| 30 | 29.09.15 | Fourier transform of periodic signals. |  | CB |  |  |
| 31 | 01.10.15 | problems |  | CB |  |  |
|  |  | **Continuous Time LTI systems** | **III** |  |  |  |
| 32 | 01.10.15 | Representation of continuous time signals in terms of impulses |  | CB |  |  |
| 33 | 06.10.15 | Representation of continuous time signals in terms of impulses |  | CB |  |  |
| 34 | 08.10.15 | Linear time variant and invariant systems |  | CB |  |  |
| 35 | 08.10.15 | Linear time variant and invariant systems |  | CB |  |  |
| 36 | 09.10.15 | unit impulse response |  | CB |  |  |
| 37 | 13.10.15 | convolution integral representations of LTI system |  | CB |  |  |
| 38 | 15.10.15 | transfer function of a LTI system |  | CB |  |  |
| 39 | 15.10.15 | Distortion less transmission through a system |  | CB |  |  |
| 40 | 16.10.15 | signal bandwidth, system bandwidth, ideal LPF, HPF |  | CB |  |  |
| 41 | 20.10.15 | and BPF characteristics, causality and Poly-Wiener criterion for physical realization |  | CB |  |  |
|  |  | **Convolution and Correlation of Signals** | **IV** |  |  |  |
| 42 | 23.10.15 | Concept of convolution |  | CB |  |  |
| 43 | 27.10.15 | correlation in time domain |  | CB |  |  |
| 44 | 28.10.15 | Concept of convolution and correlation in time domain |  | CB |  |  |
| 45 | 29.10.15 | Concept of convolution and correlation in time domain |  | CB |  |  |
| 46 | 29.10.15 | cross correlation |  | CB |  |  |
| 47 | 30.10.15 | auto correlation energy and power density spectrum |  | CB |  |  |
| 48 | 03.11.15 | properties of correlation and related problems |  | CB |  |  |
| 49 | 04.11.15 | Sampling theorem, Impulse sampling |  | CB |  |  |
| 50 | 05.11.15 | Natural and Flat top sampling |  | CB |  |  |
| 51 | 05.11.15 | Reconstruction of signal from its samples |  | CB |  |  |
| 52 | 06.11.15 | effect of under sampling – Aliasing |  | CB |  |  |
| 53 | 10.11.15 | Problems on nyquist rate and nyquist interval |  | CB |  |  |
|  |  | **Laplace Transform & Z – Transform** | **V** |  |  |  |
| 54 | 12.11.15 | Review of Laplace transforms |  | CB |  |  |
| 55 | 12.11.15 | Laplace Transforms of typical signals |  | CB |  |  |
| 56 | 13.11.15 | Laplace Transforms of typical signals |  | CB |  |  |
| 57 | 17.11.15 | properties of LT |  | CB |  |  |
| 58 | 19.11.15 | properties of LT |  | CB |  |  |
| 59 | 19.11.15 | relation between LT and FT of a signal. Region of convergence (ROC) |  | CB |  |  |
| 60 | 20.11.15 | constraints on ROC |  | CB |  |  |
| 61 | 24.11.15 | Inverse Laplace transforms |  | CB |  |  |
| 62 | 26.11.15 | Inverse Laplace transforms |  | CB |  |  |
| 63 | 26.11.15 | Introduction to Z - transform |  | CB |  |  |
| 64 | 27.11.15 | Introduction to Z - transform |  | CB |  |  |

**CR: CHALK & BOARD PPT: POWER POINT PRESENTATION**