**LESSON PLAN**

**Subject Code & Name**:13EC2008 Linear Control SystemsBranch: E.C.E

**Class / Semester**:II B.Tech I Semester **Academic Year**: 2017-2018

**FACULTY :JAYALAXMI.ANEM**

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| **Period** | **Date (Tentative)** | **Topic** | **Unit No.** | **Teaching Methodology** | **Remarks** | **Corrective action upon review** |
|  |  | **Unit-1** |  |  |  |  |
| 1 | 27.06.2017 | Concepts of Control Systems | 1 | CR |  |  |
| 2 | 29.06.2017 | Open loop control systems different examples | 1 | CR |  |  |
| 3 | 30.06.2017 | Closed Loop control systems different examples | 1 | CR |  |  |
| 4 | 03.07.2017 | Classification of control systems | 1 | CR |  |  |
| 5 | 04.07.2017 | Feedback characteristics | 1 | CR |  |  |
| 6 | 06.07.2017 | Effects of feedback characteristic | 1 | CR |  |  |
| 7 | 07.07.2017 | Mathematical models | 1 | CR |  |  |
| 8 | 10.07.2017 | Differential equations- Transfer Functions & Block Diagram | 1 | CR |  |  |
| 9 | 11.07.2017 | Representation of Signal Flow Graph | 1 | CR |  |  |
| 10 | 13.07.2017 | Reduction using Mason’s Gain Formula | 1 | CR |  |  |
| 11 | 14.07.2017 | Translational & Rotational Mechanical Systems. | 1 | CR |  |  |
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|  |  | **Unit-2** |  |  |  |  |
| 13 | 17.07.2017 | Transfer Function of elements of control Systems | 2 | CR |  |  |
| 14 | 18.07.2017 | Transfer function of DC Servo motor | 2 | CR |  |  |
| 15 | 17.07.2017 | Transfer function of AC Servo motor | 2 | CR |  |  |
| 16 | 19.07.2017 | Synchro Transmitter and Receiver | 2 | CR |  |  |
| 17 | 20.07.2017 | Time Response Analysis | 2 | CR |  |  |
| 18 | 21.07.2017 | Standard Test Signals | 2 | CR |  |  |
| 19 | 22.07.2017 | Time response of first order systems – | 2 | CR |  |  |
| 20 | 31.07.2017 | Characteristic equation of feedback control systems | 2 | CR |  |  |
| 21 | 01.08.2017 | Transient response of second order systems - | 2 | CR |  |  |
| 22 | 03.08.2017 | Time domain specifications | 2 | CR |  |  |
| 23 | 04.08.2017 | Steady state response - Steady state errors and error constants | 2 | CR |  |  |
| 24 | 07.08.2017 | Steady state response - Steady state errors and error constants | 2 | CR |  |  |
| 25 | 08.08.2017 | Effects of proportional derivative, proportional integral systems. | 2 | CR |  |  |
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|  |  | **Unit-3** |  |  |  |  |
| 26 | 10.08.2017 | The concept of stability | 3 | CR |  |  |
| 27 | 11.08.2017 | The concept of stability – Routh’s stability criterion | 3 | CR |  |  |
| 28 | 14.08.2017 | Root Locus Technique | 3 | CR |  |  |
| 29 | 17.08.2017 | The root locus concept - construction of root loci | 3 | CR |  |  |
| 30 | 18.08.2017 | Effects of adding poles and zeros to G(s), H(s) on the root loci. | 3 | CR |  |  |
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|  |  | **Unit-4** |  |  |  |  |
| 32 | 28.08.2017 | Frequency Response Analysis | 4 | CR |  |  |
| 33 | 29.08.2017 | Frequency domain specifications | 4 | CR |  |  |
| 34 | 31.08.2017 | Bode Diagrams | 4 | CR |  |  |
| 35 | 01.09.2017 | Determination of frequency domain specifications | 4 | CR |  |  |
| 36 | 04.09.2017 | Phase Margin | 4 | CR |  |  |
| 37 | 05.09.2017 | Gain Margin | 4 | CR |  |  |
| 38 | 07.09.2017 | Stability Analysis from Bode Plots | 4 | CR |  |  |
| 39 | 08.09.2017 | Polar plots | 4 | CR |  |  |
| 40 | 11.09.2017 | Nyquist plots | 4 | CR |  |  |
| 41 | 12.09.2017 | Nyquist plots |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  | **Unit-5** |  |  |  |  |
| 42 | 14.09.2017 | Compensation Techniques | 5 | CR |  |  |
| 43 | 15.09.2017 | Lag Compensators | 5 | CR |  |  |
| 44 | 18.09.2017 | Lead Compensator | 5 | CR |  |  |
| 45 | 19.09.2017 | Lead-Lag Compensator | 5 | CR |  |  |
| 46 | 21.09.2017 | State Space Analysis of Contunues Systems | 5 | CR |  |  |
| 47 | 22.09.2017 | State Space Analysis of Contunues Systems | 5 | CR |  |  |
| 48 | 25.09.2017 | Concepts of state, state variables | 5 | CR |  |  |
| 49 | 26.09.2017 | state models | 5 | CR |  |  |
| 50 | 28.09.2017 | derivation of state models from block diagrams | 5 | CR |  |  |
| 51 | 05.10.2017 | solving the time invariant state equations | 5 | CR |  |  |
| 52 | 06.10.2017 | State transition matrix, | 5 | CR |  |  |
| 53 | 09.10.2017 | Concepts of Controllability | 5 | CR |  |  |
| 54 | 12.10.2017 | Concepts of Observability. | 5 | CR |  |  |

**CR: CLASS ROOM PPT: POWER POINT PRESENTATION LCD**

**Text Books:**

**Reference Books:**

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