**LESSON PLAN**

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

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

|  |  |  |  |  |  |  |
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| **Period** | **Date (Tentative)** | **Topic** | **Unit No.** | **Teaching Methodology** | **Remarks** | **Corrective action upon review** |
|  |  | **Unit-1** |  |  |  |  |
| **1** | **28.06.2017** | **Concepts of Control Systems** | **1** | **BlackBoard** |  |  |
| **2** | **29.06.2017** | **Open loop control systems different examples** | **1** | **BlackBoard** |  |  |
| **3** | **1.07.2017** | **Closed Loop control systems different examples** | **1** | **BlackBoard** |  |  |
| **4** | **03.07.2017** | **Classification of control systems** | **1** | **BlackBoard** |  |  |
| **5** | **05.07.2017** | **Feedback characteristics** | **1** | **BlackBoard** |  |  |
| **6** | **06.07.2017** | **Effects of feedback characteristic** | **1** | **BlackBoard** |  |  |
| **7** | **08.07.2017** | **Mathematical models** | **1** | **BlackBoard** |  |  |
| **8** | **10.07.2017** | **Differential equations- Transfer Functions & Block Diagram** | **1** | **BlackBoard** |  |  |
| **9** | **12.07.2017** | **Representation of Signal Flow Graph** | **1** | **BlackBoard** |  |  |
| **10** | **13.07.2017** | **Reduction using Mason’s Gain Formula** | **1** | **BlackBoard** |  |  |
| **11** | **15.07.2017** | **Translational & Rotational Mechanical Systems.** | **1** | **BlackBoard** |  |  |
| **12** | **17.07.2017** | **Exam on unit 1** | **1** | **BlackBoard** |  |  |
|  |  |  |  | **BlackBoard** |  |  |
|  |  | **Unit-2** |  | **BlackBoard** |  |  |
| **13** | **19.07.2017** | **Transfer Function of elements of control Systems** | **2** | **BlackBoard** |  |  |
| **14** | **20.07.2017** | **Transfer function of DC Servo motor** | **2** | **BlackBoard** |  |  |
| **15** | **22.07.2017** | **Transfer function of AC Servo motor** | **2** | **BlackBoard** |  |  |
| **16** | **24.07.2017** | **Synchro Transmitter and Receiver** | **2** | **BlackBoard** |  |  |
| **17** | **26.07.2017** | **Time Response Analysis** | **2** | **BlackBoard** |  |  |
| **18** | **27.07.2017** | **Standard Test Signals** | **2** | **BlackBoard** |  |  |
| **19** | **29.07.2017** | **Time response of first order systems –** | **2** | **BlackBoard** |  |  |
| **20** | **31.07.2017** | **Characteristic equation of feedback control systems** | **2** | **BlackBoard** |  |  |
| **21** | **02.08.2017** | **Transient response of second order systems -** | **2** | **BlackBoard** |  |  |
| **22** | **03.08.2017** | **Time domain specifications** | **2** | **BlackBoard** |  |  |
| **23** | **05.08.2017** | **Steady state response - Steady state errors and error constants** | **2** | **BlackBoard** |  |  |
| **24** | **07.08.2017** | **Effects of proportional derivative, proportional integral systems.** | **2** | **BlackBoard** |  |  |
| **25** | **09.08.2017** | **Exam on Unit-2** | **2** | **BlackBoard** |  |  |
|  |  |  |  | **BlackBoard** |  |  |
|  |  | **Unit-3** |  | **BlackBoard** |  |  |
| **26** | **10.08.2017** | **The concept of stability** | **3** | **BlackBoard** |  |  |
| **27** | **12.08.2017** | **The concept of stability – Routh’s stability criterion** | **3** | **BlackBoard** |  |  |
| **28** | **14.08.2017** | **Root Locus Technique** | **3** | **BlackBoard** |  |  |
| **29** | **16.08.2017** | **The root locus concept - construction of root loci** | **3** | **BlackBoard** |  |  |
| **30** | **17.08.2017** | **Effects of adding poles and zeros to G(s), H(s) on the root loci.** | **3** | **BlackBoard** |  |  |
| **31** | **19.08.2017** | **Exam on Unit 3** |  | **BlackBoard** |  |  |
|  |  |  |  | **BlackBoard** |  |  |
|  |  | **Unit-4** |  | **BlackBoard** |  |  |
| **32** | **21.08.2017** | **Frequency Response Analysis** | **4** | **BlackBoard** |  |  |
| **33** | **23.08.2017** | **Frequency domain specifications** | **4** | **BlackBoard** |  |  |
| **34** | **24.08.2017** | **Bode Diagrams** | **4** | **BlackBoard** |  |  |
| **35** | **26.08.2017** | **Determination of frequency domain specifications** | **4** | **BlackBoard** |  |  |
| **36** | **28.08.2017** | **Phase Margin** | **4** | **BlackBoard** |  |  |
| **37** | **30.08.2017** | **Gain Margin** | **4** | **BlackBoard** |  |  |
| **38** | **31.08.2017** | **Stability Analysis from Bode Plots** | **4** | **BlackBoard** |  |  |
| **39** | **02.09.2017** | **Polar plots** | **4** | **BlackBoard** |  |  |
| **40** | **04.09.2017** | **Nyquist plots** | **4** | **BlackBoard** |  |  |
| **41** | **06.09.2017** | **Exam on Unit-4** |  | **BlackBoard** |  |  |
|  |  |  |  | **BlackBoard** |  |  |
|  |  | **Unit-5** |  | **BlackBoard** |  |  |
| **42** | **07.09.2017** | **Compensation Techniques** | **5** | **BlackBoard** |  |  |
| **43** | **09.09.2017** | **Lag Compensators** | **5** | **BlackBoard** |  |  |
| **44** | **11.09.2017** | **Lead Compensator** | **5** | **BlackBoard** |  |  |
| **45** | **13.09.2017** | **Lead-Lag Compensator** | **5** | **BlackBoard** |  |  |
| **46** | **14.09.2017** | **State Space Analysis of Continuous systems** | **5** | **BlackBoard** |  |  |
| **47** | **16.09.2017** | **Concepts of state, state variables** | **5** | **BlackBoard** |  |  |
| **48** | **18.09.2017** | **state models** | **5** | **BlackBoard** |  |  |
| **49** | **20.09.2017** | **derivation of state models from block diagrams** | **5** | **BlackBoard** |  |  |
| **50** | **21.09.2017** | **solving the time invariant state equations** | **5** | **BlackBoard** |  |  |
| **51** | **23.09.2017** | **State transition matrix,** | **5** | **BlackBoard** |  |  |
| **52** | **25.09.2017** | **Concepts of Controllability** | **5** | **BlackBoard** |  |  |
| **53** | **27.09.2017** | **Concepts of Observability.** | **5** | **BlackBoard** |  |  |
| **54** | **27.09.2017** | **Exam on Unit-5** | **5** | **BlackBoard** |  |  |

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**Signature of Faculty: Signature of H.O.D:**