Control Systems Course Outlines	
Week	**Topics**
1	Introduction to control system; Definitions, Open loop control system, Closed loop control system, General nature of the engineering control problems (Examples), Feedback control systems. Block diagram algebra and transfer functions of systems; fundamental concepts, block diagram transformation theorems, reduction of complicated block diagrams. (Different examples and exercises).
2	Introduction to control system; Definitions, Open loop control system, Closed loop control system, General nature of the engineering control problems (Examples), Feedback control systems. Block diagram algebra and transfer functions of systems; fundamental concepts, block diagram transformation theorems, reduction of complicated block diagrams. (Different examples and exercises).
3	Introduction to control system; Definitions, Open loop control system, Closed loop control system, General nature of the engineering control problems (Examples), Feedback control systems. Block diagram algebra and transfer functions of systems; fundamental concepts, block diagram transformation theorems, reduction of complicated block diagrams. (Different examples and exercises).
4	Introduction to control system; Definitions, Open loop control system, Closed loop control system, General nature of the engineering control problems (Examples), Feedback control systems. Block diagram algebra and transfer functions of systems; fundamental concepts, block diagram transformation theorems, reduction of complicated block diagrams. (Different examples and exercises). Signal flow diagrams; The signal flow diagrams and the MASON's theorem, Reduction of the signal flow diagram. (Different examples and exercises).
5	Physical systems; Introduction, translatory motion, Rotational motion, Analogous systems. Examples and problems. Performance criteria; Stability, Sensitivity, Static accuracy, Transient Response, Zero error. Signal flow diagrams; The signal flow diagrams and the MASON's theorem, Reduction of the signal flow diagram. (Different examples and exercises).
6	Physical systems; Introduction, translatory motion, Rotational motion, Analogous systems. Examples and problems. Performance criteria; Stability, Sensitivity, Static accuracy, Transient Response, Zero error. Signal flow diagrams; The signal flow diagrams and the MASON's theorem, Reduction of the signal flow diagram. (Different examples and exercises).
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8	Physical systems; Introduction, translatory motion, Rotational motion, Analogous systems. Examples and problems. Performance criteria; Stability, Sensitivity, Static accuracy, Transient Response, Zero error.
9	Techniques for determining control system stability; Routh-Hurwitz stability criterion and its limitation, Nyquist stability Criterion, Bode diagram approach, Phase and gain margins, Root locus method.
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13	Linear feedback system Design; Cascade compensation techniques, lag, lead and lag-lead compensation, ON-OFF controller, Proportional Controller, Derivative controller, Integral controller and PID controller. Introduction to design of a linear feedback system and application of design principles.
14	Linear feedback system Design; Cascade compensation techniques, lag, lead and lag-lead compensation, ON-OFF controller, Proportional Controller, Derivative controller, Integral controller and PID controller. Introduction to design of a linear feedback system and application of design principles.
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