

**RAJASTHAN TECHNICAL UNIVERSITY, KOTA**  
DEPARTMENT OF ELECTRICAL ENGINEERING

**Lecture Plan**

Session:	2015-2016
Semester:	5 <sup>th</sup> SEM
Name of Faculty:	Seema Agrawal
Department:	Electrical Engineering
Course Name and Number:	Control system
Name of Subject (with code):	Control system (5EE3A)
Batch Name/Discipline:	B.Tech Electrical

<b>Lecture Plan Details</b>		
<b>Lecture No.</b>	<b>Topic to be covered</b>	<b>Remark</b>
	<b>UNIT - I</b>	
L-1	Elements of control systems	
L-2	Examples and application of open loop systems	
L-3	Examples of open loop systems	
L-4	Application of open loop systems	
L-5	Examples and application of closed loop systems	
L-6	Brief idea of multivariable control system	
L-7	Applications & numericals	
L-8,L-9	Representation of physical system (Electro-Mechanical) by differential equations	
L-10	Determination of transfer function by block diagram reduction techniques	
L-11, L-12	Signal flow method Laplace transformation function, Inverse Laplace transformation.	
L-13	Laplace transformation function	
L-14	Applications & numericals	
	<b>UNIT - II</b>	
L-15	Characteristic equations, response to step, ramp and parabolic	

	inputs
L-16	Transient response analysis, steady state errors
L-17	Error constants
L-18, L-19	Transient & steady state analysis LTI systems
L-20	Applications & numericals
L-21	Applications & numericals
	<b>UNIT - III</b>
L-22	Working principal of Stepper Motor, Synchronous
L-23	Working principal of Servo Motor
L-24	Working principal of Servo Motor
L-25	Absolute stability and relative stability
L-26	Routh's stability criterion
L-27	Root locus method of analysis
	<b>UNIT-IV</b>
L-28	Frequency Response, Correlation between time and Frequency Response
L-29	Polar plot
L-30	Bode plot
L-31	Nyquist stability criterion. M and N Loci
L-32	Nichols chart.
L-33	Applications & numericals
	<b>UNIT-V</b>
L-34	Lag, lead and networks
L-35	Lag- lead networks
L-36	Brief idea of proportional controllers
L-37	Derivative controllers
L-38	Integral controllers
L-39	Proportional controllers Derivative and integral controllers
L-40	Numerical problems

Seema Agrawal