DELHI COLLEGE OF TECHNOLOGY & MANAGEMENT(DCTM), PALWAL	**INSTRUCTIONAL *PLAN***	**RECORD NO.: QF/ACD/009** **Revision No.: 00**

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Name of Faculty: Rajesh Kaushik Department: Mechanical

Course Title: AUTOMATIC CONTROL Course Number: ME-308-F

Semester/Section: 6th Sem Session: Jan-May 2018

Instruction Plan Details:

Lecture No.	Topics to be covered	References	Remarks
Section-A			
1.	Types of control systems, Typical Block Diagram, Performance Analysis	B.C. Nakra	
2.	Applications – Machine Tool Control, Boiler Control, Engine Governing	B.C. Nakra	
3.	Aerospace Control, Active Vibration Control; Representation of Processes & Control Elements – Mathematical Modeling	B.C. Nakra	
4.	Block Diagram Representation, Representation of Systems or Processes, Comparison Elements;	Hasan syed	
5.	Representation of Feedback Control systems – Block Diagram & Transfer Function Representation	B.C. Nakra	
6.	Representation of a Temperature, Control System, Signal Flow Graphs, Problems	B.C. Nakra	
7.	Types of Control Action; Hydraulic Controllers	B.C. Nakra	
8	Electronic Controllers	B.C. Nakra	
9	Pneumatic Controllers	B.C. Nakra	
10.	Problems	B.C. Nakra	
Section-B			
10	Time Domain Representation, Laplace Transform Representation	B.C. Nakra	
11.	System with Proportional Control	B.C. Nakra	
12.	Proportional – cum – Derivative control	B.C. Nakra	
13.	Proportional – cum – Integral Control	B.C. Nakra	
14.	Error Constants, Problems	B.C. Nakra	
15.	Frequency Response Analysis: Introduction	B.C. Nakra	
16.	Closed and Open Loop Transfer Function	B.C. Nakra	

17.	Polar Plots	Hasan syed	
18.	Rectangular Plots; Nichols Plots	Hasan syed	
19.	Equivalent Unity Feed Back Systems	Hasan syed	
20.	Problems	Hasan syed	
Syllabus till Sessional-I			
Section-C			
21.	Stability Of Control Systems , Introduction	Hasan syed	
22.	Characteristic Equation; Routh's Criterion	Hasan syed	
23.	Nyquists Criterion	Hasan syed	
24.	Gain & Phase Margins, Problems	Hasan syed	
25.	Root Locus Method : Introduction; Root Loci of a Second Order System	Hasan syed	
26.	General Case; Rules for Drawing Forms of Root Loci	Hasan syed	
27.	Relation between Root Locus Locations and Transient Response	Hasan syed	
28.	Parametric Variation; Problems	Hasan syed	
29.	Problem on Root loci	Hasan syed	
30.	Angle of Departure problems	Hasan syed	
Section-D			
31.	Introduction, Representation of Sampled Signal	Hasan syed	
32.	Hold Device; Pulse Transfer Function	B.C. Nakra	
33.	Block Diagrams; Transient Response	B.C. Nakra	
34.	Routh's Stability Criterion; Root Locus Method	B.C. Nakra	
35.	Nyquists Criterion, Problems	B.C. Nakra	
36.	Introduction; Generalized State Equation; Techniques for Deriving System State – Space Equations	B.C. Nakra	
37.	Transfer Function from State Equations	B.C. Nakra	
38.	Solution of State Vector Differential Equations; Discrete Systems	B.C. Nakra	
39.	State Vector Differential Equations; Discrete Systems, Problems	Hasan syed	
Syllabus till Sessional-II			

Signature of Faculty Member **HOD/Principal/Academic Coordinator**

Date