Course code		Course name		L-T-P- Credits	Year of Introduction
AE405	ADVA	NCED CONTROL	THEORY	3-0-0-3	2016
	site: AE301 Cont				-010
Course of					
	0	heory required for sol	ving complex contro	ol problem	s.
	•	modelling of systems	U 1	- p	
Syllabus					
Concept o function a		near time varying sys ov stability analysis –			
Expected	and the second sec	HN()		A	
-		mester students will h	nave comprehensive	knowledge	e in advanced
	ntrol theory.		RAINA		
	ks/Reference bo	oks	I OI I I		_
1. C.	D. Johnson, Pro	cess Control Instru <mark>me</mark>	ntation Technology,	7th ed., Pr	entice Hall of
Inc	<mark>lia,</mark> New Delhi, 2	2003			
	0	Time Control System.			
		Control Engineering"			
		n Control System Th <mark>e</mark> c	ory",New Age Intern	ational Pul	olishers, 2 nd
	ition,1996				
	01 0	tal control and state v			
6. R.	C. Dorf and R. H	- Richon Modern ('c	ntrol Systems Ather	Pearson	Education
D		I. Dishop, Modern Ce	milor Systems, our ed	, i caison	Laucation,
De	lhi, 2004				Laucation,
De		Course			
		Course			Semester
De Module				Hou	rs Exam
	ilhi, 2004	Course	Plan	Hou	rs Semester Marks
	Ihi, 2004 Concept of stat	Course Contents e space-state space re	Plan presentation of syste	Hou m, 6	rs Exam
Module	Ihi, 2004 Concept of stat solution of tim	Course Contents e space-state space re the invariant state equ	Plan presentation of syste lation- state transiti	Houn m, 6 on	rs Semester Marks
Module	Concept of stat solution of tim matrix. Linear	Course Contents e space-state space re	Plan presentation of syste lation- state transiti	Houn m, 6 on	rs Semester Marks
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Module	Concept of stat solution of tim matrix. Linear space represent Non-linear system	Course Contents e space-state space reperintering system. ation and solution. tem, types of non-liner em stability analysis-	Plan presentation of syste lation- state transiti Discrete system sta nearity, singular poi phase plane techniqu	Houn m, 6 on ate nt, 6	rs Semester Exam Marks 15%
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SECOND INTERNAL EXAMINATION

V	MIMO systems-controllability- Observability- Effect of pole-zero cancellation, Practical examples-controllable and uncontrollable systems-observable and unobservable systems. Optimal control system-definition- design using state variable feedback and error squared performance indices.	8	20%			
VI	Z- Transform and digital control system- Z-transfer function- block diagram- signal flow graph- discrete root locus.	8 M	20%			
FND SEMESTER EXAMINATION						

QUESTION PAPER PATTERN:

Maximum Marks:100

Exam Duration: 3 Hours

Part A

Answer any two out of three questions uniformly covering Modules 1 and 2 together. Each question carries 15 marks and may have not more than four sub divisions.

(15 x 2 = 30 marks)

Part B

Answer any two out of three questions uniformly covering Modules 3 and 4 together. Each question carries 15 marks and may have not more than four sub divisions.

Estd

(15 x 2 = 30 marks)

Part C

Answer any two out of three questions uniformly covering Modules 5 and 6 together. Each question carries 15 marks and may have not more than four sub divisions.

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(20 x 2 = 40 marks)