TENTATIVE LESSON PLAN: R1622041

Course Title: Electronic Circuit Analysis (R1622041)

Section : Sec A		Date: 18 - 11 - 2019	Page No: 01	of 03		
Revision No: 00		Prepared By : B. Ravi	Approved By			
Tools: Black Board						
No. of Periods		TOPIC	Date	Mode of Delivery		
	UNIT-I	Small Signal High Frequency Transistor A	mplifier model	ls		
CO1: Al	ole to and analy	sis of small signal high frequency transistor ampl				
T1: Integ	grated Electron	ics- J. Millman, C. Halkias, Tata Mc-Graw Hill, S Analysis- S. Salivahanan, N. Suresh Kumar, Tata	Second Edition.			
1	Transistor at	high frequencies				
2		mmon emitter transistor model				
3	Hybrid π con		From:	Lecture Interspersed With discussions		
4	Hybrid π capa		18-11-19			
5		ybrid π model				
6		uit current gain				
7		with resistive load				
8	Frequency res					
9	Gain bandwic		To:			
10		ommon Source and common drain Amplifier	07-12-19			
		gh frequencies				
11	Problems and	tutorial class				
		UNIT-II Multi Stage Amplifiers				
CO2: At	ole to Design an	nd analysis of multi stage amplifiers using BJT an	d FET and Diff	erential		
amplifier	using BJT					
T1: Integ	rated Electroni	cs- J. Millman, C. Halkias, Tata Mc-Graw Hill, S	econd Edition.			
12: Elect	ronic Circuit A	analysis- S. Salivahanan, N. Suresh Kumar, Tata	Mc-Graw Hill,	Second		
Edition						
12	Classification					
13		nsistor amplifier and its analysis				
14		vo stage RC coupled amplifier	From:			
15	Darlington pa		9-12-19	Lecture		
16	Boot-strap em			interspersed		
17	Cascode ampl		To:	with		
18		nplifier using BJT	27-12-19	discussions		
19	Analysis of m	ulti stage amplifiers using FET				

No. of Periods	TOPIC	Date	Mode of Delivery
	UNIT-III Feedback Amplifiers		2011,013
T1: Inte	ble to Design and analysis of feedback amplifiers using BJT grated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Seconctronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata Mc-	d Edition Graw Hil	l, Second
20	Classification of amplifiers		
21	T 11 1 · · · · · ·	_	
22		From: 30-12-19	
23	Feedback topologies		
24	Effect of feedback on i/p impedance		Lecture
25	Effect of feedback on o/p impedance		intersperse
26	Generalized analysis of feedback amplifiers		with
27	Method of analysis of FB amplifiers	To:	discussions
28		7-01-20	discussions
29	Problems	, 01 20	
	UNIT-IV Oscillators		
			V Hill Secon
Edition	ctronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata	Mc-Grav	v Hill, Secon
dition 30	Condition for oscillations		Hill, Secon
30 31	Condition for oscillations RC-phase shift oscillator with BJT	From:	v Hill, Secon
dition 30	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET 3		
30 31 32	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator	From:	Lecture
30 31 32 33	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators	From:	Lecture intersperse
30 31 32 33 34	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator	From:	Lecture interspersed with
30 31 32 33 34 35	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator	From:	Lecture interspersed with
30 31 32 33 34 35 36	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET	From:	Lecture interspersed with
30 31 32 33 34 35 36 37	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET	From: 1-01-20	Lecture interspersed with
30 31 32 33 34 35 36 37 38	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator	From: 1-01-20 To:	Lecture interspersed with
30 31 32 33 34 35 36 37 38 39	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET	From: 1-01-20 To:	Lecture interspersed with
30 31 32 33 34 35 36 37 38 39	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability	From: 1-01-20 To:	Lecture interspersed with
30 31 32 33 34 35 36 37 38 39 40	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability UNIT-V Power Amplifiers	From: 1-01-20 To: 7-02-20	Lecture interspersed with discussions
30 31 32 33 34 35 36 37 38 39 40	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability UNIT-V Power Amplifiers ow the classification of the power amplifier and their analysis with per	From: 1-01-20 To: 7-02-20	Lecture interspersed with discussions
30 31 32 33 34 35 36 37 38 39 40 O5: Kn	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability UNIT-V Power Amplifiers ow the classification of the power amplifier and their analysis with perspect of the power amplifier and their analysis with persp	From: 1-01-20 To: 7-02-20	Lecture interspersed with discussions
30 31 32 33 34 35 36 37 38 39 40 O5: Kn 1: Integ 2: Elect	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability UNIT-V Power Amplifiers ow the classification of the power amplifier and their analysis with per	From: 1-01-20 To: 7-02-20	Lecture interspersed with discussions
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30 31 32 33 34 35 36 37 38 39 40 O5: Kn 1: Integ 2: Elect	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability UNIT-V Power Amplifiers ow the classification of the power amplifier and their analysis with persated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Second tronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata Mc-Collassification of amplifiers	From: 1-01-20 To: 7-02-20 rformance Edition. Graw Hill,	Lecture interspersed with discussions e comparison.
30 31 32 33 34 35 36 37 38 39 40 O5: Kn 1: Integ 2: Electedition 41	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability UNIT-V Power Amplifiers ow the classification of the power amplifier and their analysis with per grated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Second aronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata Mc-College Classification of amplifiers Efficiency Classification of amplifiers Efficiency	From: 1-01-20 To: 7-02-20 rformance Edition. Graw Hill,	Lecture interspersed with discussions e comparison. Second
30 31 32 33 34 35 36 37 38 39 40 O5: Kn 1: Integ 2: Electedition 41 42	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability UNIT-V Power Amplifiers ow the classification of the power amplifier and their analysis with per grated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Second aronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata Mc-College Classification of amplifiers Efficiency Classification of amplifiers Efficiency	From: 1-01-20 To: 7-02-20 rformance Edition. Graw Hill,	Lecture interspersed with discussions e comparison. Second
30 31 32 33 34 35 36 37 38 39 40 O5: Kn 1: Integ 2: Elect dition 41 42 43	Condition for oscillations RC-phase shift oscillator with BJT RC-phase shift oscillator with FET Wein bridge oscillator Generalized analysis of LC Oscillators Hartley oscillator Colpitt's oscillator Hartley oscillator with JFET Colpitt's oscillator with JFET Crystal oscillator Frequency and amplitude stability UNIT-V Power Amplifiers tow the classification of the power amplifier and their analysis with personate Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Second aronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata Mc-Collassification of amplifiers Efficiency Class A power Amplifiers and their analysis Oscillator Oscillat	From: 1-01-20 To: 7-02-20 rformance Edition. Graw Hill,	Lecture interspersed with discussions e comparison. Second

Complementary symmetry push pull amplifier		
Cross over Distortion		
Class -C power amplifier	To:	Lecture interspersed
Class -D power amplifier		
Class AB power amplifier		with
Thermal stability and Heat sinks		discussions
problems		
	Cross over Distortion Class -C power amplifier Class -D power amplifier Class AB power amplifier Thermal stability and Heat sinks	Cross over Distortion Class -C power amplifier Class -D power amplifier Class AB power amplifier Thermal stability and Heat sinks

UNIT-VI Tuned Amplifiers

CO6: Know the classification of the tuned amplifiers and their analysis

T1: Integrated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Second Edition.

T2: Electronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata Mc-Graw Hill, Second Edition

Q-Factor,		
Capacitance single tuned amplifier	From:	
Double tuned amplifiers		
Effect of cascading single tuned amplifiers on band width		Lecture
Effect of cascading double		interspersed
tuned amplifiers on band width		with
staggered tuned amplifiers	To:	discussions
Stability of tuned amplifiers	18-03-19	
Wideband amplifiers.		
	Capacitance single tuned amplifier Double tuned amplifiers Effect of cascading single tuned amplifiers on band width Effect of cascading double tuned amplifiers on band width staggered tuned amplifiers Stability of tuned amplifiers	Capacitance single tuned amplifier Double tuned amplifiers Effect of cascading single tuned amplifiers on band width Effect of cascading double tuned amplifiers on band width staggered tuned amplifiers To: Stability of tuned amplifiers 18-03-19

Signature of Faculty

Date: 18-11-19

S. Syl Gown Signature of HOD

Date: 18/11/19

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ENIKEPADU, VIJAYAWADA

TENTATIVE LESSON PLAN: R1622041

Section	: Sec B	Date: 18 - 11 - 2019	Page No: 01	of 03
Revision No: 00		Prepared By : B. Ravi	Approved B	
Tools: B	lack Board		Tapproved B	y . HOD
No. of Periods		TOPIC	Date	Mode of Delivery
	UNIT-I	Small Signal High Frequency Transistor	Amplifier mode	ls
CO1 : Ab	ole to and ana	lysis of small signal high frequency transistor am	olifier using BJT	and FET
T1: Integ	grated Electro	nics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Analysis- S. Salivahanan, N. Suresh Kumar, Ta	Second Edition.	
1	Transistor a	t high frequencies		
2		ommon emitter transistor model	-	
3		onductance's	From:	
4	Hybrid π ca		18-11-19	
5		hybrid π model	- 10 11 15	Lecture
6		cuit current gain		Interspersed
7		with resistive load		With
8	Frequency r		To:	discussions
9		idth product.	09-12-19	
10		common Source and common drain Amplifier	-	
	circuits at h	igh frequencies		
11	Problems an	d tutorial class		
		UNIT-II Multi Stage Amplifiers		
CO2: Ab	le to Design a	and analysis of multi stage amplifiers using BJT a	nd FET and Diff	erential
amplifier	using BJT			or official
T1: Integ	rated Electron	nics- J. Millman, C. Halkias, Tata Mc-Graw Hill,	Second Edition.	
12: Elect	ronic Circuit	Analysis- S. Salivahanan, N. Suresh Kumar, Tat	a Mc-Graw Hill	Second
Edition				
12		n of amplifiers		
13	Cascaded tr	ansistor amplifier and its analysis		
14	Analysis of i	two stage RC coupled amplifier	From:	
15		air amplifier	10-12-19	Lecture
16		mitter follower		interspersed
17 18	Cascode amp		To:	with
IX	Differential	amplifier using BJT	24-12-19	discussions
19	A 1	multi stage amplifiers using FET		and and it is

No. of Periods	TOPIC	Date	Mode of Delivery
	UNIT-III Feedback Amplifiers		Denvery
CO3: A	ble to Design and analysis of feedback amplifiers using BJT		
T1: Inte	grated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, S	econd Edition	
T2: Elec	etronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata	Mc-Graw Hil	I Second
Edition	, , , , , , , , , , , , , , , , , , , ,	THE GIAN III	i, second
20	Classification of amplifiers		
21	Feedback principle and concept	From:	
22	Characteristics of negative feedback amplifiers	26-12-19	
23	Feedback topologies		
24	Effect of feedback on i/p impedance		Lecture
25	Effect of feedback on o/p impedance		interspersed
26	Generalized analysis of feedback amplifiers	To:	with
27	Method of analysis of FB amplifiers	09-01-20	discussions
28	Method of analysis of FB amplifiers		
29	Problems		
	UNIT-IV Oscillators		
CO4: A	ble to Derive the expressions for frequency of oscillation and co	ndition for os	cillation of Re
and LC	oscillators	nation for 030	ination of K
T1: Integ	grated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Se	econd Edition	
T2: Elec	etronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar,	Tata Mc-Gray	Hill Secon
Edition	· · · · · · · · · · · · · · · · · · ·	rata ivic Grav	, iiii, secon
30	Condition for oscillations	T	
31	RC-phase shift oscillator with BJT	From:	
32	RC-phase shift oscillator with FET	27-01-20	
33	Wein bridge oscillator	27-01-20	Lecture
34	Generalized analysis of LC Oscillators	-	interspersed
35	Hartley oscillator		with
36	Colpitt's oscillator		discussions
37	Hartley oscillator with JFET	To:	discussions
38	Colpitt's oscillator with JFET	05-02-19	
39	Crystal oscillator	00 02 15	
40	Frequency and amplitude stability		
10	Trequency and ampritude stability		
	TINIT V D. A 110		
705. V.	UNIT-V Power Amplifiers		
705; KII	ow the classification of the power amplifier and their analysis with	th performance	e comparison.
ra. meg	rated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, Se	cond Edition.	
	ronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata N	Mc-Graw Hill,	Second
Edition	Classification of amplifiers		
caition	THE PARTY OF THE PROPERTY OF THE PARTY OF TH		
41			
41 42	Efficiency	From:	Lecture
41 42 43	Efficiency Class A power Amplifiers and their analysis	From: 06-02-20	interspersed
41 42 43 44	Efficiency Class A power Amplifiers and their analysis Harmonic Distortions		interspersed with
41 42 43 44 45	Efficiency Class A power Amplifiers and their analysis Harmonic Distortions Class A push pull power Amplifiers		interspersed
41 42 43 44	Efficiency Class A power Amplifiers and their analysis Harmonic Distortions		interspersed with

48	Cross over Distortion		
49	Class -C power amplifier	_	Lecture
50	Class -D power amplifier	To:	interspersed
51	Class AB power amplifier	25-02-20	with discussions
52	Thermal stability and Heat sinks		
53	problems		
	UNIT-VI Tuned Amplifiers		
CO6: K	now the classification of the tuned amplifiers and their analysis		
T1: Inte	grated Electronics- J. Millman, C. Halkias, Tata Mc-Graw Hill, S	Second Edition.	
T2: Elec	etronic Circuit Analysis- S. Salivahanan, N. Suresh Kumar, Tata	a Mc-Graw Hill.	Second
Edition			
Lattion			
54	Q-Factor,		
		From:	
54	Q-Factor, Capacitance single tuned amplifier Double tuned amplifiers	From: 25-02-20	
54 55	Capacitance single tuned amplifier Double tuned amplifiers		Lecture
54 55 56	Capacitance single tuned amplifier		Lecture interspersed
54 55 56 57	Capacitance single tuned amplifier Double tuned amplifiers Effect of cascading single tuned amplifiers on band width		Lecture interspersed with
54 55 56 57	Capacitance single tuned amplifier Double tuned amplifiers Effect of cascading single tuned amplifiers on band width Effect of cascading double		Lecture interspersed
54 55 56 57 58	Capacitance single tuned amplifier Double tuned amplifiers Effect of cascading single tuned amplifiers on band width Effect of cascading double tuned amplifiers on band width	25-02-20	Lecture interspersed with

Signature of Faculty

Date: 18-11-19

S-Syl Gow Signature of HOD

Date: 18/11]19

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ENIKEPADU, VIJAYAWADA

Course	Title: CONTROL SYSTEMS (R1622042)	022042	
Section	: A Date: 18.11.2020	P	Page No: 01 of 03
Revisio	n No: 00 Prepared By: A.V.P.Sarvari		Approved By: HOD
10018 : B	lack board, PPTs, Moodle	A	approved by : HOD
No. of Periods	TOPIC	Date	Mode of Delivery
	INTRODUCTION		
CO1: U	nderstanding the concept of control systems, Rep	resenting Me	echanical and Flootrical
Systems	s using Differential Equations and introduces the	concents of f	and Electrical
auvanta	iges to various control systems.		
TB: I.J	Nagarath and M.Gopal, " Control System I	Engines	L MY
Publish	ers, Fifth Edition	Engineering,"	New Age International
1.	Introduction		
2.	System Control System		
3.	Open Loop Control System		
4.	Closed loop Control System		
5,6.	Different Examples	From:	
7.	Mathematical models of Physical Systems	19	
8,9,10.	Transfer functions		
11,12.	Differential equations of physical systems		Lecture interspersed
13to18.	Block diagram Algebra	To: 6.12.20	with discussions
19.	Signal flow graphs with illustration		
20.	Signal flow graphs with illustrative examples Effects of Feedback		
	Feedback Characteristics and its advantages		
21.	Linearizing effect of feedback		
	Emedizing creet of feedback		
TIME II	COMPROYAND		
CO2 O	CONTROLLER COMPONENTS & TIME RES	SPONSE ANA	ALYSIS
CO2: Ob	otaining Transfer Function of a servo motor and	the performan	nce metrics to design the
COME OF S	ystem in time-domain.		
TB:I.J.N	agarath and M.Gopal, " Control System Enginee	ring." New A	ge International
Publisher	-, - I I Edition	g, 110W /1	ge international
	Controller Components		
00	DC Servomotor (Armature Controlled and Field		
22.	Controlled) with necessary derivation for		
22	transfer function	From:	
23.	AC Servomotor and its transfer function	9.12.2019	
24.	AC Tachometer		Lecture interspersed
	Potentiometer		with discussions
25.	Synchros	To:	With discussions
	A(Position Control Court	21.12.2019	
20	AC Position Control Systems	21.12.2019	
26.	Time Response Analysis	21.12.2019	
26. 27. 28 to 31.	Time Response Analysis Standard test Signals Time response of first and second order systems	21.12.2019	

	: A	NTROL SYSTEMS (R1622042) Date: 18.11.2020	n	- N 00 CO2
Revision No: 00		Prepared By : A.V.P.Sarvari		e No: 02 of 03
Tools: B	lack board,	PPTs	App	proved By : HOD
No. of			1	
Periods		TOPIC	Date	Mode of Delivery
32.	steady st	ate errors and error constants	From:	
33.	Effect of	adding a zero to a system	9.12.2019	
34.	Design s	pecifications of second order systems	To:	T
35.	Performa	ance indices	21.12.2019	Lecture intersperse with discussions
		PTS OF STABILITY & ROOT LOCU		
CO3: O and com open-loo TB:I.J.N	btaining the menting of the period of the pe	ne location of roots of linear differentia on stability. Locating roots in S-Domain for stability of system. and M.Gopal, " Control System E	l equations hav and finding cr	ing real coefficients itical value of
	Concepts	s of Stability and Algebraic Criteria		
36.	The conc	ept of Stability		_
37.		y Conditions for Stability	From:	
38.	Routh-H	urwitz Srability Criterion		
39.	Relative s	stability analysis	23.12.2019	Lecture interspersed
40.	The Root	Locus Technique		with discussions
то.	Introduct	#요. (1)		
		T	To: 10.1.2020	
41.	The Root	Locus concepts		
42.	The Root Construct	ion of Root Loci		
	The Root Construct Tutorial	ion of Root Loci		
42. 43.	Construct Tutorial	ion of Root Loci	3012020	
42. 43. UNIT-IV	Construct Tutorial FREQUE	ion of Root Loci ENCY RESPONSE ANALYSIS		
42. 43. UNIT-IV	Construct Tutorial FREQUE alyzing th	ion of Root Loci ENCY RESPONSE ANALYSIS e stability of the system in frequency do		
42. 43. UNIT-IV CO4: An lomain s	Construct Tutorial FREQUE alyzing the	ENCY RESPONSE ANALYSIS e stability of the system in frequency do	omain and obta	ining frequency
42. 43. UNIT-IV CO4: An lomain s	Construct Tutorial FREQUE alyzing the pecification agarath ar	ion of Root Loci ENCY RESPONSE ANALYSIS e stability of the system in frequency do ons. nd M.Gopal, "Control System Engineer	omain and obta	ining frequency
42. 43. UNIT-IV CO4: An lomain s	Tutorial FREQUITE Alyzing the pecification agarath arms, Fifth Editorial	ion of Root Loci ENCY RESPONSE ANALYSIS e stability of the system in frequency do ns. nd M.Gopal, " Control System Enginee	omain and obta	ining frequency
42. 43. UNIT-IV CO4: An lomain s PB:I.J.Na Publisher 44.	Tutorial FREQUITE Alyzing the pecification agarath arms, Fifth Editorial	ENCY RESPONSE ANALYSIS e stability of the system in frequency do ons. ad M.Gopal, " Control System Enginee dition y response analysis	omain and obta	ining frequency
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42. 43. UNIT-IV CO4: An lomain s B:I.J.Na Publisher 44. 45. 46.	Tutorial FREQUE alyzing the pecification agarath and rs, Fifth Education Introduction	ENCY RESPONSE ANALYSIS e stability of the system in frequency do ons. nd M.Gopal, "Control System Enginee dition y response analysis on n between time and frequency response	omain and obta ring," New Age From:	ining frequency International Lecture interspersed
42. 43. UNIT-IV CO4: An lomain s B:I.J.Na Publisher 44. 45. 46. 47 to 51.	Tutorial FREQUE alyzing the pecification agarath and rs, Fifth Education Introduction Correlation	ENCY RESPONSE ANALYSIS e stability of the system in frequency do ns. nd M.Gopal, "Control System Enginee dition y response analysis on n between time and frequency response	omain and obta ring," New Age From: 24.1.2020	ining frequency International
42. 43. UNIT-IV CO4: An lomain s B:I.J.N: Publisher 44. 45. 46. 47 to 51. 2to57. 8to67.	Tutorial FREQUI alyzing the pecification agarath and areas, Fifth Education Correlation Polar Plots Bode Plots	ENCY RESPONSE ANALYSIS e stability of the system in frequency do ns. nd M.Gopal, "Control System Engineer dition y response analysis on n between time and frequency response	omain and obta ring," New Age From:	ining frequency International Lecture interspersed
42. 43. UNIT-IV CO4: An lomain s B:I.J.N: Publisher 44. 45. 46. 47 to 51. 2to57. 8to67.	Tutorial FREQUI alyzing the pecification agarath and areas, Fifth Education Correlation Polar Plots Bode Plots	ENCY RESPONSE ANALYSIS e stability of the system in frequency do ns. nd M.Gopal, "Control System Enginee dition y response analysis on n between time and frequency response	omain and obta ring," New Age From: 24.1.2020	ining frequency International Lecture interspersed
42. 43. UNIT-IV CO4: An lomain s B:I.J.N: Publisher 44. 45. 46. 47 to 51. 2to57. 8to67.	Tutorial TREQUE alyzing the pecification agarath and rs, Fifth Ede Frequence Introduction Correlation Polar Plots Bode Plots Nyquist St	ENCY RESPONSE ANALYSIS e stability of the system in frequency do ns. nd M.Gopal, "Control System Engineer dition y response analysis on n between time and frequency response	omain and obta ring," New Age From: 24.1.2020	ining frequency International Lecture interspersed

		TENTATIVE PLAN: R102	2042	
		NTROL SYSTEMS (R1622042)		
Section				No: 03 of 03
		oved By: HOD		
	ck board, l	PPTs	r	
No. of Periods		TOPIC	Mode of Delivery	
UNIT-V	INTROL	OUCTION TO DESIGN		
CO5: Co	mpensati	ing system performance using Lag, Lead	and Lag-lead c	ontrollers and
		ect of proportionality controllers.	Ü	
		and M.Gopal, " Control System Enginee	ring" New Age	International
	rs, Fifth		ing, new age	intoi Hativiiai
70.		ction to Design		
71.	The desi	gn problem		
72.		ary consideration of classical design	From:	
73to76.		on of basic Compensators	17.2.2020	
		compensation in time domain and		Lecture interspersed
77.		y domain	To: 7.3.2020	with discussions
78.		of PID Controllers		
79.	Tutorial			
IINIT-V	ISTATE	VARIABLE ANALYSIS AND DESIGN	<u> </u>	
		g a control system using state equations.		
		등하는 이 경기는 열차하는 한 점점 하는 사람들이 되어 되었다. 그 사람들이 되어 되었다면 하는 사람들이 없는 것이다. 이번		
		and M.Gopal, " Control System Enginee	ring," New Age	International
Publishe	rs, Fifth I		<u> </u>	
		riable Analysis and Design		
80.	Introduc			
81.		s of State	From:	
		riables and State models	9.3.2020	Lecture interspersed
82.		dels for linear continuous-time systems	9.3.2020	with discussions
83.		iables and linear discrete-time systems		TITLE GLOGISTICITY
84,85,8		of state equations and Concepts of	То: 23.3.2020	
6.		ability and Observability	10. 23.3.2020	
87.	Tutorial			

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Course Ti	tle: CONTROL SYSTEMS (R1622042)		
Section :			o: 01 of 03
	No: 00 Prepared By: A.V.P.Sarvari	Approv	ed By : HOD
Tools : Blac	k board, PPTs, Moodle		
No. of	TOPIC	Date	Mode of Delivery
Periods			
CO1: Un Systems t advantag	INTRODUCTION derstanding the concept of control systems, Reprusing Differential Equations and introduces the control systems.	oncepts of feedba	ick and its
	Nagarath and M.Gopal, " Control System E	ngineering," Nev	Age Internationa
	rs, Fifth Edition		
1.	Introduction		
2.	System Control System		
3.	Open Loop Control System	-	
4.	Closed loop Control System	From:	
5,6.	Different Examples	18.11.2019	
7.	Mathematical models of Physical Systems		I active interespond
8,9,10.	Transfer functions		Lecture interspers with discussions
11,12.	Differential equations of physical systems	То: 6.12.2019	
13to18.	Block diagram Algebra		
19.	Signal flow graphs with illustrative examples		
20.	Effects of Feedback		
01	Feedback Characteristics and its advantages		
21.	Linearizing effect of feedback		
CO2: Ol control s TB:I.J.N	CONTROLLER COMPONENTS & TIME RE otaining Transfer Function of a servo motor and system in time-domain. Jagarath and M.Gopal, "Control System Engineers, Fifth Edition Controller Components	the performance	metrics to design th
	DC Servomotor (Armature Controlled and Field		
22.	DC Servomotor (Armature Controlled and Field Controlled) with necessary derivation for transfer function	From:	
22.	DC Servomotor (Armature Controlled and Field Controlled) with necessary derivation for transfer function AC Servomotor and its transfer function	From: 9.12.2019	
23.	DC Servomotor (Armature Controlled and Field Controlled) with necessary derivation for transfer function AC Servomotor and its transfer function AC Tachometer	From: 9.12.2019	
	DC Servomotor (Armature Controlled and Field Controlled) with necessary derivation for transfer function AC Servomotor and its transfer function AC Tachometer Potentiometer	9.12.2019	
23.	DC Servomotor (Armature Controlled and Field Controlled) with necessary derivation for transfer function AC Servomotor and its transfer function AC Tachometer Potentiometer Synchros	9.12.2019 To:	
23.	DC Servomotor (Armature Controlled and Field Controlled) with necessary derivation for transfer function AC Servomotor and its transfer function AC Tachometer Potentiometer Synchros AC Position Control Systems	9.12.2019	
23.	DC Servomotor (Armature Controlled and Field Controlled) with necessary derivation for transfer function AC Servomotor and its transfer function AC Tachometer Potentiometer Synchros AC Position Control Systems Time Response Analysis	9.12.2019 To:	Lecture intersperse with discussions
23. 24. 25.	DC Servomotor (Armature Controlled and Field Controlled) with necessary derivation for transfer function AC Servomotor and its transfer function AC Tachometer Potentiometer Synchros AC Position Control Systems Time Response Analysis Standard test Signals	9.12.2019 To: 21.12.2019	

Course Title: CO	NTROL SYSTEMS (R162204%)	
Section : 8	Date: 18.11.2020	Page No: 02 of 03
Revision No: 00	Prepared By : A.V.P.Sarvari	Approved By : HOD

No. of Periods	TOPIC	Date	Mode of Delivery
32.	steady state errors and error constants	From:	
33.	Effect of adding a zero to a system	9.12.2019	
34.	Design specifications of second order systems	To:	Lecture interspersed
35.	Performance indices	21.12.2019	with discussions

UNIT-III CONCEPTS OF STABILITY & ROOT LOCUS TECHNIQUE

CO3: Obtaining the location of roots of linear differential equations having real coefficients and commenting on stability. Locating roots in S-Domain and finding critical value of open-loop gain K for stability of system.

TB:I.J.Nagarath and M.Gopal, "Control System Engineering," New Age International Publishers, Fifth Edition

	Concepts of Stability and Algebraic Criteria		
36.	The concept of Stability		
37.	Necessary Conditions for Stability		
38.	Routh-Hurwitz Srability Criterion	From:	Lecture interspersed with discussions
39.	Relative stability analysis	23.12.2019	
40.	The Root Locus Technique		with discussions
40.	Introduction	To: 10.1.2020	
41.	The Root Locus concepts	10: 10:1.2020	
42.	Construction of Root Loci		
43.	Tutorial		

UNIT-IV FREQUENCY RESPONSE ANALYSIS

CO4: Analyzing the stability of the system in frequency domain and obtaining frequency domain specifications.

TB:I.J.Nagarath and M.Gopal, "Control System Engineering," New Age International Publishers, Fifth Edition

44.	Frequency response analysis		Lecture interspersed with discussions
45.	Introduction		
46.	Correlation between time and frequency response	From: 24.1.2020	
47 to 51.	Polar Plots		
52to57.	Bode Plots		
58to67.	Nyquist Stability Criterion	To: 15.2.2020	
68,69.	Tutorial		

~ -	TENTATIVE PLAN: R16	22042	
	Title: CONTROL SYSTEMS (R1622042)	l n	NI 02 - C02
Section		Page No : 03 of 03	
	No: 00 Prepared By: A.V.P.Sarvari	Ap	proved By : HOD
No. of			
Periods	TOPIC	Date	Mode of Delivery
- Population American American	INTRODUCTION TO DESIGN		
CO5: Co	ompensating system performance using Lag, Lea	d and Lag-lea	d controllers and
	ng the effect of proportionality controllers.		
	agarath and M.Gopal, " Control System Engine	ering." New A	ge International
	ers, Fifth Edition	8,	8
70.	Introduction to Design		
71.	The design problem		
72.	Preliminary consideration of classical design	From:	
73to76.	Realization of basic Compensators	17.2.2020	
77.	Cascade compensation in time domain and	Lecture interspersed with discussions	
11.	frequency domain	To: 7.3.2020	
78.	Tuning of PID Controllers		
79.	Tutorial		
CO6:Re TB:I.J.N	I STATE VARIABLE ANALYSIS AND DESIGN presenting a control system using state equations lagarath and M.Gopal, "Control System Engineers, Fifth Edition State Variable Analysis and Design	i.	age International
]		
80.	Introduction		
	Introduction Concepts of State		
81.	Introduction Concepts of State State Variables and State models	From:	Lecture interspersed
81. 82.	Introduction Concepts of State State Variables and State models State models for linear continuous-time systems	From: 9.3.2020	
81.	Introduction Concepts of State State Variables and State models	Commission of the Commission o	Lecture interspersed with discussions

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TENTATIVE LESSON PLAN: R1622043 EM WAVES AND TRANSMISSION LINES

Course Title: I	EM WAVES AND TRANSMISSION LIN	TES .		
Section : Sec	I Date: 18/11/19	Page No: 01		
Revision No: (Approved B	y: HOD	
Tools: Black b	oard, PPTs			
No. of	TOPIC	Date	Mode of	
Periods			Delivery	
	ECTROSTATICS		0.C T	
CO1: An in de	pth analysis of electro static fields with h	elp of Coulomb's Law	&Gauss Law	
TB: " Elemen	nts of Electromagnetics", Matthew N.O.	Sadiku, Oxford Univ. I	ress, 3rd ed.,	
2001				
	Review of Coordinate System			
2	Coulomb's Law			
	Electric Field Intensity, Electric Flux			
3	Density			
4	Gauss Law and Applications		Lecture interspersed with discussions	
_	Electric Potential, Maxwell's Two	Section 1		
5	Equations for ESF	From: 18.11.2019		
6	Energy Density, Illustrative Problems	1.0 10.11.2012		
7	Convection and Conduction Currents	T (10.0010		
	Dielectric Constant, Continuity	To: 6.12.2019		
8	Equation, Relaxation Time			
	Poisson's and Laplace's Equations			
9	Capacitance: Parallel Plate, Coaxial	4		
10	Illustrative Problems			
10	Illustrative Problems			
UNIT-II	MAGNETOSTATICS			
CO2: An in	depth analysis of electro static fields v	vith help of Biot-Sava	rt's Law and	
Ampere's Cir				
TB: " Element 2001.	nts of Electromagnetics", Matthew N.O.	Sadiku, Oxford Univ.	Press, 3rd ed.,	
	Biot-Savart Law, Ampere's Circuital			
11	Law and Applications			
12	Magnetic Flux Density, Maxwell			
Sant Land	Equations for MSF			
13	Magnetic Scalar and Vector Potentials			
14	Forces due to Magnetic Fields			
15	Ampere's Force Law, Inductances, Magnetic Energy			

	Illustrative Problems		
16	Maxwell's Equations (Time Varying Fields)		
17	Faraday's Law and Transformer emf		
	Inconsistency of Ampere's Law	From: 9.12.2019	Lecture
18	Displacement Current Density		interspersed
	Maxwell's Equations in Different Final	m 01 10 2010	with
	Forms	To: 21.12.2019	discussions
19	Conditions at Boundary Surface:		aiscussions
	Dielectric-Dielectric Interfaces		
20	Dielectric-Conductor Interfaces		
	Illustrative Problems		
21	Illustrative Problems		
propagation TB: " Elem 2001.	of electromagnetic waves, and predict this pents of Electromagnetics", Matthew N.O. S	adiku, Oxford Univ. I	Press, 3rd ed.
22	Wave Equations for Conducting and Dielectric Media		
23	Uniform Plane Waves – Definition, All Relations Between E & H, Sinusoidal Variations	From: 23.12.2019	
24	Wave Propagation in Lossy and Lossless Dielectrics		Lecture
25	Wave Propagation in free space	То: 10.1.2020	with discussions
25	Wave Propagation in good conductors		discussions
26	Skin depth		
27	Polarization & Types		
28	Illustrative Problems		
20	Illustrative Problems		
	TO A TAX A TOP OUT A DIA CTEDICTICS II		
	EM WAVE CHARACTERISTICS-II to demonstrate the reflection and refraction ents of Electromagnetics", Matthew N.O. S.		
CO4: Able TB: "Elem	to demonstrate the reflection and refraction tents of Electromagnetics", Matthew N.O. S Reflection and Refraction of Plane Waves		
CO4: Able TB: "Elem 2001.	Reflection and Refraction of Plane Waves Normal and Oblique Incidences for both Perfect Conductor and Perfect Dielectrics		
CO4: Able TB: "Elem 2001.	Reflection and Refraction of Plane Waves Normal and Oblique Incidences for both Perfect Conductor and Perfect	Sadiku, Oxford Univ.	
CO4: Able TB: "Elen 2001. 29	Reflection and Refraction of Plane Waves Normal and Oblique Incidences for both Perfect Conductor and Perfect Dielectrics Brewster Angle, Critical Angle, Total	From: 24.1.2020	

34	Power Loss in a Plane Conductor		interspersed
35	Illustrative Problems		with
UNIT-V	TRANSMISSION LINES-I		discussions
			• • •
	nstrate and compute various parameters fo	r transmission lines	using either a
	or classical theory		
	nents of Electromagnetics", Matthew N.O. Sa	idiku, Oxford Univ. P	ress, 3rd ed.,
2001. 36	Tumos Donomotous	* * * · · · · · · · · · · · · · · · · ·	1
	Types, Parameters		
37	T & π equivalent circuits		
38	Transmission Line Equations		
	Primary & Secondary Constants		
39	Expression for Characteristic Impedance	From: 17.2.2020	
	Propagation Constant	110111111111111111111111111111111111111	Lecture
40 -	Phase & group Velocities		interspersed
41	Infinite Line Concepts	To: 7.3.2020	with
42	Lossless lines/Low Loss		discussions
43	Distortion – Condition for Distortion	_	ansoussions.
	less lines and Minimum Attenuation		
44	Loading - Types of Loading		
	Illustrative Problems		
UNIT-VI	TRANSMISSION LINES-II		
CO6: Design	n matching networks for loaded transmission	lines	
TR. " Elem	ents of Electromagnetics", Matthew N.O. Sa	diku Ovford Univ I	Dross 3rd od
2001.	ones of Electromagnetics; Matthew 14.0. Ba	idiku, Oxioid Olliv. I	ress, ora ea.
	Input Impedance Relations, SC and OC	ANN	1
45	Lines		
46	Reflection Coefficient, VSWR		
47	Low loss radio frequency lines		
48	UHF Transmission lines		
	UHF Lines as Circuit Elements; λ/4, λ	From: 9.3.2020	Lecture
49	/2, λ /8 Lines – Impedance	110111. 7.0.2020	interspersed
17	Transformations		with
50	Smith Chart – Construction	To: 23.3.2020	discussions
51	Smith Chart – Construction		
52	Quarter wave transformer		
53	Single and Double Stub Matching		
53	Illa de d'a Danie State Materille		

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TENTATIVE LESSON PLAN: R1622043 EM WAVES AND TRANSMISSION LINES

Section : Sec	EM WAVES AND TRANSMISSIO		1 000
Revision No : (Page No: 0	
Tools: Black b	J - 1	Rao Approved	By: HOD
No. of	TOPIC	Date	Mode of
Periods UNIT-I ELF	ECTROSTATICS		Delivery
TR: " Florer	pth analysis of electro static fields	with help of Coulomb's Law	&Gauss Law
2001	nts of Electromagnetics", Matthew	N.O. Sadiku, Oxford Univ.	Press, 3rd ed
1	Review of Coordinate System		1
2	Coulomb's Law		
3	Electric Field Intensity, Electric Fi	lux	
4	Gauss Law and Applications		
5	Electric Potential, Maxwell's Two Equations for ESF	From: 18.11,2019	Lecture interspersed with discussions
6	Energy Density, Illustrative Proble		
7	Convection and Conduction Curre		
8	Dielectric Constant, Continuity Equation, Relaxation Time	To: 6.12.2019	
	Poisson's and Laplace's Equations		
9	Capacitance: Parallel Plate, Coaxia	al	
10	Illustrative Problems		all and the
10	Illustrative Problems		1
UNIT-II	MAGNETOSTATICS	- Augustine - Augu	
CO2: An in d	lepth analysis of electro static fi	elds with help of Biot-Sava	rt's Law and
Ampere's Circ			
TB: " Element 2001.	ts of Electromagnetics", Matthew	N.O. Sadiku, Oxford Univ.	Press, 3rd ed.
11	Biot-Savart Law, Ampere's Circui	tal .	T
	Law and Applications		
12	Magnetic Flux Density, Maxwell Equations for MSF		
13	Magnetic Scalar and Vector Potent	tials	
14	Forces due to Magnetic Fields	tiais	
The state of the s	Ampere's Force Law, Inductances		

	Illustrative Problems		
16	Maxwell's Equations (Time Varying Fields)		
17	Faraday's Law and Transformer emf		
10	Inconsistency of Ampere's Law		
18	Displacement Current Density	From: 9.12.2019 To: 21.12.2019	Lecture interspersed with discussions
10	Maxwell's Equations in Different Final Forms		
19	Conditions at Boundary Surface: Dielectric-Dielectric Interfaces		
20	Dielectric-Conductor Interfaces		
21	Illustrative Problems		
21	Illustrative Problems		
UNIT-III	EM WAVE CHARACTERISTICS-I		-

EM WAVE CHARACTERISTICS-I

CO3: Interpret the effects of lossy and low loss dielectrics and conductors upon the propagation of electromagnetic waves, and predict this process in specific applications

TB: "Elements of Electromagnetics", Matthew N.O. Sadiku, Oxford Univ. Press, 3rd ed., 2001.

22	Wave Equations for Conducting and		
22	Dielectric Media		
	Uniform Plane Waves - Definition, All		
23	Relations Between E & H, Sinusoidal		
	Variations	From: 23.12.2019	
24	Wave Propagation in Lossy and		Lecture
24	Lossless Dielectrics		interspersed
25	Wave Propagation in free space	To: 10.1.2020	with
23	Wave Propagation in good conductors		discussions
26	Skin depth		
27	Polarization & Types		
28	Illustrative Problems	-,	
28	Illustrative Problems		
TINITED TY	DATE OF LEGISTRA		

UNIT-IV EM WAVE CHARACTERISTICS-II

CO4: Able to demonstrate the reflection and refraction of waves at boundaries

TB: "Elements of Electromagnetics", Matthew N.O. Sadiku, Oxford Univ. Press, 3rd ed., 2001.

29	Reflection and Refraction of Plane		
29	Waves		
	Normal and Oblique Incidences for both		
30	Perfect Conductor and Perfect	From: 24.1.2020	
	Dielectrics		
31	Brewster Angle, Critical Angle, Total		
31	Internal Reflection	To: 15.2.2020	
32	Surface Impedance		
33	Poynting Vector, Poynting Theorem		Lecture

34	Power Loss in a Plane Conductor		interspersed
35	Illustrative Problems		with discussions
NIT-V	TRANSMISSION LINES-I		
CO5: Demo	nstrate and compute various parameters fo	or transmission lines u	sing either a
mith chart	or classical theory		
TB: " Elem	ents of Electromagnetics", Matthew N.O. Sa	adiku, Oxford Univ. Pr	ess, 3rd ed.,
2001.			
36	Types, Parameters		
37	T & π equivalent circuits		
20	Transmission Line Equations		
38	Primary & Secondary Constants		
	Expression for Characteristic Impedance	E 17 2 2020	
39	Propagation Constant	From: 17.2.2020	Lecture
40	Phase & group Velocities		intersperse
41	Infinite Line Concepts	То: 7.3.2020	with
42	Lossless lines/Low Loss	10. 7.5.2020	discussion
	Distortion – Condition for Distortion		discussions
43	less lines and Minimum Attenuation		
	Loading - Types of Loading		
44	Illustrative Problems		
UNIT-VI	TRANSMISSION LINES-II		
	n matching networks for loaded transmissio	n lines	
	ents of Electromagnetics", Matthew N.O. S		ress, 3rd ed
2001.	ents of Electromagnetics , fization 1000 s	,	
	Input Impedance Relations, SC and OC		
45	Lines		
46	Reflection Coefficient, VSWR		
47	Low loss radio frequency lines		
48	UHF Transmission lines		T
	UHF Lines as Circuit Elements; λ/4, λ	From: 9.3.2020	Lecture
49	/2, \(\lambda\)/8 Lines – Impedance		intersperse
.,	Transformations		with
50	Smith Chart – Construction	То: 23.3.2020	discussion
51	Smith Chart – Construction		
52	Quarter wave transformer		
53	Single and Double Stub Matching		
	Til de d'an Deschlama		

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TENTATIVE LESSON PLAN: R1622044 ANALOG COMMUNICATIONS

Section : Sec	ANALOG COMMUNICATIONS I Date: 18/11/19	Page No	• 1 to 4
Revision No : (ed By : HOD
Tools: Black b		Approve	u by : HOD
S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I AMPL	TUDE MODULATION	-	Denvery
CO1: Able to lea	rn the concept of Amplitude Modulation and Demodulation	on	
TB1: Principle	s of Communication Systems - Simon Haykin, John	Wiley 2nd Ed	
1	Introduction to communication system	Line J. Line Lu.,	•
2	Need for modulation		
3	Frequency Division Multiplexing		
4	Amplitude Modulation, Definition		
5	Time domain and frequency domain description	From:	
6	Single tone modulation	10/11/10	Lecture
7	Power relations in AM waves,	18/11/19	interspersed
8	Generation of AM waves, Square law Modulator	То	with discussions
9	Switching modulator	06/12/19	
10	Detection of AM Waves, Square law detector	00/12/19	
11	Envelope detector		
12	Tutorial		
	3 & SSB MODULATION		
CO2: Able to lear	n the concept of Double Side Band Suppressed Carrier a	nd Single Side B	and Suppressed
Carrier Modulation	on and Demodulation		PP
TB1: Principles	of Communication Systems - Simon Haykin, John W	Viley, 2nd Ed.,.	
13	DSB & SSB MODULATION: Double side band suppressed carrier modulators, time domain and frequency domain description		PERMIT
14	Generation of DSBSC Waves	From:	
	Balanced Modulators	09/12/19	Lecture
15	Ring Modulator	07/12/19	interspersed with
16	Coherent detection of DSB-SC Modulated waves COSTAS Loop	То	discussions
		3/12/19	
17	Frequency domain description, Frequency		

18	Time domain description, Phase discrimination method for generating AM SSB Modulated waves		
19	Demodulation of SSB Waves		
20	Vestigial side band modulation: Frequency description,		Lecture interspersed
21	Generation of VSB Modulated wave, Time domain description		with discussions
22	Envelope detection of a VSB Wave pulse Carrier		
23	Comparison of AM Techniques, Applications of different AM Systems & Problems		,
O3. Able to	ANGLE MODULATION learn the concept of Angle Modulation and Demodulation es of Communication Systems - Simon Haykin, John W ANGLE MODULATION: Basic concepts, Frequency Modulation	Tiley, 2nd Ed.,.	
	Single tone frequency modulation		
25	Spectrum Analysis of Sinusoidal FM Wave		
26			Lecture
27	Narrow band FM.	From:	interspersed
28	Wide band FM Constant Average Power	23/12/19	with
29	Transmission bandwidth of FM Wave - Generation of FM Waves,	To 06/01/20	discussions
30	Direct FM, Detection of FM Waves: Balanced Frequency discriminator,		
31	Zero crossing detector, Phase locked loop,		
32	Comparison of FM & AM		
33	Tutorial		
UNIT-IV	TRANSMITTERS AND RECEIVERS		
COA.Coine L	Knowledge on different types of Transmitters and Receive oles of Communication Systems - Simon Haykin, John V	rs Wiley, 2nd Ed.,	- 100 mg
34	TRANSMITTERS & RECEIVERS: Radio Transmitter - Classification of Transmitter		at .
35	AM Transmitter, Effect of feedback on performance of AM Transmitter	From: 09/01/20	Lecture intersperse
	FM Transmitter – Variable reactance type	То	with discussion
36	Phase modulated FM Transmitter	18/02/20	
37	Frequency stability in FM Transmitter		

	RF section and Characteristics - Frequency		
39	changing and tracking Intermediate frequency		Lecture interspersed
40	AGC, FM Receiver		with
41	Tutorial		discussions
	ISE nowledge on effect of noise in Analog Communication Systems of Communication Systems - Simon Haykin, John V		
42	NOISE: Review of noise and noise sources		
43	Noise figure		
44	Noise in Analog communication Systems	From:	
45	Noise in DSB& SSB System	27/02/20	Lecture
46	Noise in AM System	То	interspersed with
47	Noise in Angle Modulation Systems	18/03/20	discussions
48	Threshold effect in Angle Modulation System		
49	Pre-emphasis & de-emphasis		
50	Problems		
ACTIVITY OF THE PROPERTY OF TH	PULSE MODULATION s Knowledge on PAM, PWM and PPM Generation and I		
TB1: Princip	les of Communication Systems - Simon Haykin, John V	Wiley, 2nd Ed.,.	
51	PULSE MODULATION: Time Division multiplexing		Sales
52	Types of Pulse modulation	From:	
53	PAM (Single polarity, double Polarity)	19/02/20	Lecture
54	PWM: Generation & demodulation of PWM,	То	intersperse
55	PPM, Generation and demodulation of PPM,	26/02/20	discussions
56	TDM Vs FDM		
57	Problems		

TB1: Principles of Communication Systems - Simon Haykin, John Wiley, 2nd Ed.,. **TB2:** Principles of Communication Systems - H Taub & D. Schilling, Gautam Sahe, TMH, 2007

3rd Edition.

TB3: Communication Systems - B.P. Lathi, BS Publication, 2006.

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TENTATIVE LESSON PLAN: R1622044 ANALOG COMMUNICATIONS

Section : Se	ec II Date: 18/11/19	Page No	: 1 to 4
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S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I AMI	PLITUDE MODULATION		
CO1: Able to	learn the concept of Amplitude Modulation and Demodul	ation	
TB1: Princip	oles of Communication Systems - Simon Haykin, Joh	n Wiley, 2nd Ed.,.	
1	Introduction to communication system		
2	Need for modulation		
3	Frequency Division Multiplexing		
4	Amplitude Modulation, Definition		
5	Time domain and frequency domain description	From:	
6	Single tone modulation		Lecture
7	Power relations in AM waves,	18/11/19	interspersed
8	Generation of AM waves, Square law Modulator	r To	with discussions
9	Switching modulator	06/12/19	
10	Detection of AM Waves, Square law detector	00/12/17	
11	Envelope detector		
12	Tutorial		
UNIT-II	DSB & SSB MODULATION		
Carrier Modul TB1: Princip	learn the concept of Double Side Band Suppressed Carrie lation and Demodulation les of Communication Systems - Simon Haykin, John		and the second
13	DSB & SSB MODULATION: Double side band suppressed carrier modulators, time domain and frequency domain description	1	
14	Generation of DSBSC Waves Balanced Modulators	From: 09/12/19	Lecture interspersed
15	Ring Modulator		with
16	Coherent detection of DSB-SC Modulated wave COSTAS Loop		discussions
17	Frequency domain description, Frequency discrimination method for generation of SSB	3/12/19	

18	Time domain description, Phase discrimination method for generating AM SSB Modulated waves		
19	Demodulation of SSB Waves		Lasters
20	Vestigial side band modulation: Frequency		Lecture interspersed
21	Generation of VSB Modulated wave, Time		with discussions
22	Envelope detection of a VSB Wave pulse Carrier		
23	Comparison of AM Techniques, Applications of different AM Systems & Problems		
103. Able to	ANGLE MODULATION learn the concept of Angle Modulation and Demodulation les of Communication Systems - Simon Haykin, John W ANGLE MODULATION: Basic concepts,	iley, 2nd Ed.,.	
24	Frequency Modulation		
25	Single tone frequency modulation		
26	Spectrum Analysis of Sinusoidal FM Wave		Lecture
27	Narrow band FM.	From:	interspersed
28	Wide band FM Constant Average Power	23/12/19	with
29	Transmission bandwidth of FM Wave - Generation of FM Waves,	To 06/01/20	discussions
30	Direct FM, Detection of FM Waves: Balanced Frequency discriminator,		
31	Zero crossing detector, Phase locked loop,		
32	Comparison of FM & AM		
33	Tutorial		
UNIT-IV	TRANSMITTERS AND RECEIVERS		
COA.Coing I	Knowledge on different types of Transmitters and Received ples of Communication Systems - Simon Haykin, John	ers Wiley, 2nd Ed.,	·
34	TRANSMITTERS & RECEIVERS: Radio Transmitter - Classification of Transmitter		
35	AM Transmitter, Effect of feedback on performance of AM Transmitter	From: 09/01/20	Lecture intersperse
	FM Transmitter – Variable reactance type	To	with discussion
	FIVI Transmitter Variable reactions	The second secon	
36	Phase modulated FM Transmitter	18/02/20	
36	•	18/02/20	

39	RF section and Characteristics - Frequency changing and tracking Intermediate frequency		Lecture
40	AGC, FM Receiver		interspersed with
41	Tutorial		discussions
	ISE nowledge on effect of noise in Analog Communication Syst les of Communication Systems - Simon Haykin, John V		
42	NOISE: Review of noise and noise sources		
43	Noise figure		
44	Noise in Analog communication Systems	From:	
45	Noise in DSB& SSB System	27/02/20	Lecture
46	Noise in AM System	To	intersperse with
47	Noise in Angle Modulation Systems	18/03/20	discussion
48	Threshold effect in Angle Modulation System	10,90,20	
49	Pre-emphasis & de-emphasis		
50	Problems		
	PULSE MODULATION s Knowledge on PAM, PWM and PPM Generation and I les of Communication Systems - Simon Haykin, John PULSE MODULATION: Time Division		
51	multiplexing		
	T CD-les me deletion	From:	
52	Types of Pulse modulation	Fiom.	
52	PAM (Single polarity, double Polarity)	19/02/20	Lecture
		-	Lecture intersperse with
53	PAM (Single polarity, double Polarity)	19/02/20	intersperse with
53 54	PAM (Single polarity, double Polarity) PWM: Generation & demodulation of PWM,	19/02/20 To	intersperse

TB1: Principles of Communication Systems - Simon Haykin, John Wiley, 2nd Ed.,.
TB2: Principles of Communication Systems - H Taub & D. Schilling, Gautam Sahe, TMH, 2007 3rd Edition.

TB3: Communication Systems – B.P. Lathi, BS Publication, 2006.

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TENTATIVE LESSON PLAN: R1622045 PULSE AND DIGITAL CIRCUITS

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2	high pass re circuit	25/11/19	
3	low pass rc circuit	25,26,27,28/11/19	
4	rseponse of hpf to sine, step,ramp	29/11/19,2/12/19	
5	response of hpf to pulse, square signals	3/12/19	T a atuma
6	response of lpf to sine, step, ramp	6/12/19	Lecture
7	response pf lpf to pulse, square	7/12/19	interspersed with
8	rc network as integratoe & differentiator	9/12/19	discussions
9	rl & rlc circuit response to step		discussions
10	ringing circuits	9/12/19	
11	ringing circuits	10/12/19	
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13	clipping at two levels, transfer		
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14	clipping at two levels, transfer charecteristics of clippers emitter clippers, comparators	12,13/12/19 12/12/19 16/12/19	
14 15	clipping at two levels, transfer charecteristics of clippers emitter clippers, comparators clamper with diode	12,13/12/19 12/12/19 16/12/19 19/12/19	Lecture
14 15 16	clipping at two levels, transfer charecteristics of clippers emitter clippers, comparators clamper with diode clamping theorem, effect of diode	12,13/12/19 12/12/19 16/12/19 19/12/19 17/12/19	
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14 15 16 17 18	clipping at two levels, transfer charecteristics of clippers emitter clippers, comparators clamper with diode clamping theorem, effect of diode diode & transistor clippers clipping at two levels, transfer charecteristics of clippers	12,13/12/19 12/12/19 16/12/19 19/12/19 17/12/19 20/12/19	interspersed with
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14 15 16 17 18	clipping at two levels, transfer charecteristics of clippers emitter clippers, comparators clamper with diode clamping theorem, effect of diode diode & transistor clippers clipping at two levels, transfer charecteristics of clippers emitter clippers, comparators clamper with diode clamping theorem, effect of diode	12,13/12/19 12/12/19 16/12/19 19/12/19 17/12/19 20/12/19 21/12/19 23/12/19	interspersed with
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26	linear charecteristics of diode	30/12/19	
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28	transistor as switch	31/12/19	
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32	transistor switching times	6/1/20	interspersed
33	comparision of logic families	0/1/20	with
34	realization of logic gates with dtl, ttl, ecl and cmos logic	6/1/20	discussions
35	diode as switch	6/1/20	
36	linear charecteristics of diode	7 /1/20	
37	transistor as switch	9/1/20	
38	break down voltage consideration	10/1/20	
39	saturation parameters	10/1/20	
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	& DIGITAL CIRCUITS", A.ANAND KUMAR" analysis & design of fixed bias		
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40 41 42	& DIGITAL CIRCUITS", A.ANAND KUMAR" analysis & design of fixed bias self bias bi-stable multivibrator collector catching circuits	2/2/20 3/2/20	
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TENTATIVE LESSON PLAN: R1622045 PULSE AND DIGITAL CIRCUITS

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40 41 42 43 44 45 46 47 48 49 50 51 UNIT-V	analysis & design of fixed bias self bias bi-stable multivibrator collector catching circuits commutating caapacitors methods of triggering schmitt trigger collector coupled monostable multi vibrator voltage to time converter astable multivibrator voltage to frequency converter problems tutorial VOLTAGE TIME BASE GENERATOR n and analyze the voltage time base generators	2/2/20 3/2/20 12/2/20 13/3/20 5/3/20 9/3/20 9/3/20 10/3/20 16/3/20 17/3/20	interspersed
40 41 42 43 44 45 46 47 48 49 50 51 UNIT-V	analysis & design of fixed bias self bias bi-stable multivibrator collector catching circuits commutating caapacitors methods of triggering schmitt trigger collector coupled monostable multi vibrator voltage to time converter astable multivibrator voltage to frequency converter problems tutorial VOLTAGE TIME BASE GENERATOR n and analyze the voltage time base generators E & DIGITAL CIRCUITS", A.ANAND KUMAR"	2/2/20 3/2/20 12/2/20 13/3/20 5/3/20 9/3/20 9/3/20 10/3/20 16/3/20 17/3/20	interspersed with
40 41 42 43 44 45 46 47 48 49 50 51 UNIT-V CO5: Desig TB:" PULS	analysis & design of fixed bias self bias bi-stable multivibrator collector catching circuits commutating caapacitors methods of triggering schmitt trigger collector coupled monostable multi vibrator voltage to time converter astable multivibrator voltage to frequency converter problems tutorial VOLTAGE TIME BASE GENERATOR n and analyze the voltage time base generators E & DIGITAL CIRCUITS", A.ANAND KUMAR" features of time base generator	2/2/20 3/2/20 12/2/20 13/3/20 5/3/20 9/3/20 9/3/20 10/3/20 16/3/20 17/3/20 17/3/20	interspersed with discussions
40 41 42 43 44 45 46 47 48 49 50 51 UNIT-V CO5: Desig TB:" PULS	analysis & design of fixed bias self bias bi-stable multivibrator collector catching circuits commutating caapacitors methods of triggering schmitt trigger collector coupled monostable multi vibrator voltage to time converter astable multivibrator voltage to frequency converter problems tutorial VOLTAGE TIME BASE GENERATOR n and analyze the voltage time base generators E & DIGITAL CIRCUITS", A.ANAND KUMAR" features of time base generator methods of generation	2/2/20 3/2/20 12/2/20 13/3/20 5/3/20 9/3/20 9/3/20 10/3/20 16/3/20 17/3/20 17/3/20 27/1/20 30/1/20	interspersed with discussions Lecture
40 41 42 43 44 45 46 47 48 49 50 51 UNIT-V CO5: Desig TB:" PULS 52 53	analysis & design of fixed bias self bias bi-stable multivibrator collector catching circuits commutating caapacitors methods of triggering schmitt trigger collector coupled monostable multi vibrator voltage to time converter astable multivibrator voltage to frequency converter problems tutorial VOLTAGE TIME BASE GENERATOR n and analyze the voltage time base generators E & DIGITAL CIRCUITS", A.ANAND KUMAR" features of time base generator methods of generation miller & bootstrap circuits	2/2/20 3/2/20 12/2/20 13/3/20 5/3/20 9/3/20 9/3/20 10/3/20 16/3/20 17/3/20 17/3/20	interspersed with discussions Lecture interspersed
40 41 42 43 44 45 46 47 48 49 50 51 UNIT-V CO5: Desig TB:" PULS 52 53 54	analysis & design of fixed bias self bias bi-stable multivibrator collector catching circuits commutating caapacitors methods of triggering schmitt trigger collector coupled monostable multi vibrator voltage to time converter astable multivibrator voltage to frequency converter problems tutorial VOLTAGE TIME BASE GENERATOR n and analyze the voltage time base generators E & DIGITAL CIRCUITS", A.ANAND KUMAR" features of time base generator methods of generation	2/2/20 3/2/20 12/2/20 13/3/20 5/3/20 9/3/20 9/3/20 10/3/20 16/3/20 17/3/20 17/3/20 27/1/20 30/1/20	interspersed with discussions

58	miller & bootstrap circuits	3/2/20	
59	transistor bootstrap generator	4/2/20	
60	tutorial	6/2/20	
61	problems	7/2/20	
62	miller & bootstrap circuits	10/2/20	
63	transistor bootstrap generator	8/2/20	
UNIT-VI	SYNCHRONIZATION OF FREQUENCY D	IVISION SAMPLING	
CO6: construc	et synchronization circuits & analyze.		
		••	
	DIGITAL CIRCUITS", A.ANAND KUMAR		
64	principles of synchronization	10/2/20	
65	frequency division in sweep circuit	11/2/20	
66	relaxation circuits	13/2/20	
67	monostable relazation circuits	14/2/20	
68	synchronization -sweep circuits	15/2/20	Lecture
69	sampling gates	27/2/20	interspersed
70	uni-directional sampling gates	28/2/20	with
71	bi-directional sampling gates	28/2/20	discussions
72	pedestal in gate circuits	11/2/20	
73	tutorial	13/2/20	
74	problems	24/2/20	
75	principles of synchronization	17/2/20	
76	frequency division in sweep circuit	25/2/20	

Signature of Faculty

SRK Institute of Technology ENIKEPADU, VIJAYAWADA-521 108 Signature of HOD

TENTATIVE LESSON PLAN: ECE

Course Title: MANAGEMENT SCIENCE(R1622026) Section :ECE -A Date : 20-11-19		Page No: 01 of 02		
Revision		Approved By : HOD		
Tools : Bla				
No. of	TOPIC	Date	Mode of Delivery	
Periods		(Planned)		
(Planned				
UNIT –I	Introduction to Management			
	ple to understand the concept and nature of management, eva	luation of management theorie	es, motivation and	
leadership s				
1 D :: Dr.	A. R. Aryasri, Management Science' TMH 2011 Introduction to management	20-11-19		
2	Nature & importance of management	22-11-19		
3	Generic function of management	24-11-19		
4	Evaluation of management thoughts	26-11-19	Lecture	
5	Motivation theories	27-11-19	interspersed	
6	Decision making process	28-11-19	with	
7	Designing organization structure	29-11-19	Discussions	
8	Principles & types of organization	30-11-19		
9	Organization typology	01-12-19		
10	Global leadership	03-12-19		
11	Principals and types of management	04-12-19		
CO2:: Ab TB :: Dr.	ole to equip with concepts of operations, project management A. R. Aryasri, Management Science' TMH 2011			
	ple to equip with concepts of operations, project management	t and inventory control		
CO2:: Ab TB :: Dr.	ole to equip with concepts of operations, project management A. R. Aryasri, Management Science' TMH 2011		Γ	
CO2:: Ab TB :: Dr. 12	A. R. Aryasri, Management Science' TMH 2011 Work study	06-12-19		
CO2:: Ab TB :: Dr. 12	ole to equip with concepts of operations, project management A. R. Aryasri, Management Science' TMH 2011		Lecture	
CO2:: Ab TB :: Dr. 12 13 14	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control	06-12-19 06-12-19		
CO2:: Ab TB :: Dr. 12 13 14	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts	06-12-19 06-12-19 13-12-19	interspersed with	
CO2:: Ab TB :: Dr. 12 13 14 15 16	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts	06-12-19 06-12-19 13-12-19 13-12-19	interspersed with	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19	interspersed with	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19	interspersed with	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19	interspersed with	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III:	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19	interspersed with discussions	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organization.	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19	interspersed with discussions	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organizals of distribution	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19	interspersed with discussions	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organization.	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19	interspersed with discussions	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organizals of distribution	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19	interspersed with discussions	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel TB :: Dr.	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management Dele to understand the different functional areas in an organization of distribution A. R. Aryasri, Management Science' TMH 2011	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19 22-12-19	interspersed with discussions	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel TB :: Dr.	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ble to understand the different functional areas in an organizals of distribution A. R. Aryasri, Management Science' TMH 2011 Concept of HRM,HRD and PMIR Functions of HRM	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19 22-12-19 22-12-19 27-12-2019	interspersed with discussions	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel TB :: Dr. 21	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organizals of distribution A. R. Aryasri, Management Science' TMH 2011 Concept of HRM,HRD and PMIR	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19 22-12-19 27-12-2019 27-12-2019 03-01-2020	interspersed with discussions	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel TB :: Dr. 21 22 23	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organizals of distribution A. R. Aryasri, Management Science' TMH 2011 Concept of HRM,HRD and PMIR Functions of HRM Wage payment plans Job evolution Vs merit rating	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19 22-12-19 27-12-2019 03-01-2020 03-01-2020	interspersed with discussions s- product life cyc	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel TB :: Dr. 21 22 23 24	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organizals of distribution A. R. Aryasri, Management Science' TMH 2011 Concept of HRM,HRD and PMIR Functions of HRM Wage payment plans Job evolution Vs merit rating Marketing management functions	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19 22-12-19 27-12-2019 27-12-2019 03-01-2020 03-01-2020 20-01-2020	interspersed with discussions s- product life cyc Lecture interspersed	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel TB :: Dr. 21 22 23 24 25 26	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organizals of distribution A. R. Aryasri, Management Science' TMH 2011 Concept of HRM,HRD and PMIR Functions of HRM Wage payment plans Job evolution Vs merit rating	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19 22-12-19 22-12-2019 27-12-2019 03-01-2020 20-01-2020 20-01-2020	interspersed with discussions s- product life cyc	
CO2:: Ab TB :: Dr. 12 13 14 15 16 17 18 19 20 UNIT-III: CO3:: Ab and channel TB :: Dr.	A. R. Aryasri, Management Science' TMH 2011 Work study Statistical quality control Control charts Problems On Control Charts Material Management Need For Inventory Control EOQ And ABC Analysis Problems On EOQ Other Methods Of EOQ Functional management ole to understand the different functional areas in an organizals of distribution A. R. Aryasri, Management Science' TMH 2011 Concept of HRM,HRD and PMIR Functions of HRM Wage payment plans Job evolution Vs merit rating Marketing management functions Marketing strategies based on plc Channels of distribution	06-12-19 06-12-19 13-12-19 13-12-19 19-12-19 20-12-19 20-12-19 22-12-19 22-12-19 22-12-19 27-12-2019 27-12-2019 03-01-2020 03-01-2020 20-01-2020	interspersed with discussions s- product life cycles Lecture interspersed with	

OTHER TATE	roject Management			
CO4:: Ab	le to equip with different techniques in project management, ie			
	CPM and project crashing			
	A. R. Aryasri, Management Science' TMH 2011			
30	Introduction to PERT and CPM	28-01-2020		
31	Development of network diagram	29-01-2020	Lecture interspersed	
32	Difference between pert and CPM	07-02-2020		
33	Identifying critical part and probability	12-02-2020	with	
Project crashing simple problems		13-02-2020	discussions	
CO5:: Abl	rategic Management le to equip with the concept and practical issues relating to strate A. R. Aryasri, Management Science' TMH 2011	egic management		
35	Vision, mission, goals and strategy	15-02-2020		
36	Elements of corporate planning process	16-02-2020	Lecture	
37	SWOT analysis	21-02-2020	interspersed	
38	Steps in strategic formulation and implementation	21-02-2020	with discussions	
39	Generic strategy and global strategy	23-02-2020		
40 UNIT-VI:C	Theories of MNCs ontemporary Management Practices	23-02-2020 25-02-2020		
40 UNIT-VI:C CO6:: Abl	Theories of MNCs			
40 UNIT-VI:C CO6:: Abl	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices,			
40 UNIT-VI:C CO6:: Abl TB:: Dr. A	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011	25-02-2020		
40 UNIT-VI:C CO6:: Abl TB:: Dr. A	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS	25-02-2020		
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management	25-02-2020 26-02-2020 28-02-2020		
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma	25-02-2020 26-02-2020 28-02-2020 28-02-2020		
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44	Theories of MNCs contemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management	25-02-2020 26-02-2020 28-02-2020 28-02-2020 02-03-2020		
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44 45	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources	25-02-2020 26-02-2020 28-02-2020 28-02-2020 02-03-2020 05-03-2020 07-03-2020		
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44 45 46	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning	25-02-2020 26-02-2020 28-02-2020 28-02-2020 02-03-2020 05-03-2020 07-03-2020 11-03-2020	Lecture	
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44 45 46 47	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering	25-02-2020 26-02-2020 28-02-2020 28-02-2020 02-03-2020 05-03-2020 07-03-2020 11-03-2020 13-03-2020	interspersed	
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44 45 46 47 48	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking Balanced Score Card	25-02-2020 26-02-2020 28-02-2020 28-02-2020 02-03-2020 05-03-2020 07-03-2020 11-03-2020 13-03-2020 13-03-2020		
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44 45 46 47 48 49	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking	25-02-2020 26-02-2020 28-02-2020 28-02-2020 02-03-2020 05-03-2020 07-03-2020 11-03-2020 13-03-2020 14-03-2020	interspersed with	
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44 45 46 47 48 49 50	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking Balanced Score Card Material Requirement Planning Capability Maturity Model	25-02-2020 26-02-2020 28-02-2020 28-02-2020 02-03-2020 05-03-2020 11-03-2020 13-03-2020 13-03-2020 14-03-2020 14-03-2020	interspersed with	
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44 45 46 47 48 49 50 51	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking Balanced Score Card Material Requirement Planning Capability Maturity Model Supply Chain Management	25-02-2020 28-02-2020 28-02-2020 28-02-2020 02-03-2020 05-03-2020 07-03-2020 11-03-2020 13-03-2020 14-03-2020 14-03-2020 17-03-2020	interspersed with	
40 UNIT-VI:C CO6:: Abl TB:: Dr. A 41 42 43 44 45 46 47 48 49 50 51 52	Theories of MNCs ontemporary Management Practices e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011 Basic concepts of MIS Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking Balanced Score Card Material Requirement Planning Capability Maturity Model	25-02-2020 26-02-2020 28-02-2020 28-02-2020 02-03-2020 05-03-2020 11-03-2020 13-03-2020 13-03-2020 14-03-2020 14-03-2020	interspersed with	

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Signature of the Faculty

Signature of the HOD

SRK INSTITUTE OF TECHNOLOGY Winger change share services of marketing

TENTATIVE LESSON PLAN: R1622026 MANAGEMENT SCIENCE

Section :E		NAGEMENT SCIENCE(R1622026) Date: 20-11-19	Page No + 01 of	502	
Revision No: 00 Prepared By: B.NAVEEN		Page No: 01 of 02			
Tools : Black		Trepared by . B.NAVEEN	Approved By : HOD		
No. of		TOPIC	Date	Mode of	
Periods			(Planned)	Delivery	
(Planned)					
UNIT –I	Introdu	ection to Management			
CO1:: Able	to unders	tand the concept and nature of management, eva	aluation of management theori	es, motivation and	
leadership sty	les				
		ri, Management Science' TMH 2011			
1		action to management	20-11-19		
2		& importance of management	23-11-19		
3		c function of management	24-11-19		
5		ation of management thoughts	26-11-19	Lecture	
6	A THURSDAY AND A STATE OF THE S		27-11-19	interspersed	
7		on making process	27-11-19	with Discussions	
8		ning organization structure	28-11-19	Discussions	
9		ples & types of organization	30-11-19		
10		zation typology	01-12-19		
	100000000000000000000000000000000000000	leadership	01-12-19		
11 UNIT –II	Princip	pals and types of management	03-12-19		
12	Work s		06-12-19		
13		cal quality control	06-12-19		
14	Contro	l charts	13-12-19	Lecture	
15		ms On Control Charts	13-12-19	interspersed	
16	Materia	al Management	19-12-19	with	
17	Need F	or Inventory Control	19-12-19	discussions	
18		and ABC Analysis	20-12-19		
19		ns On EOQ	20-12-19		
20		Methods Of EOQ	22-12-19		
UNIT-III: Fu					
CO3:: Able	to underst	and the different functional areas in an organiz	zation and their responsibilities	s- product life cyc	
and channels of	of distribut	tion			
1 B :: Dr. A.	R. Aryasr	i, Management Science' TMH 2011			
21		ot of HRM,HRD and PMIR	27-12-2019		
22	Function	ons of HRM	27-12-2019		
23	Wage p	payment plans	03-01-2020		
24	Job evo	lution Vs merit rating	03-01-2020	Lecture	
25	A THE RESERVE THE PARTY OF THE	ing management functions	19-01-2020	interspersed	
26		ing strategies based on plc		with	
27		els of distribution	19-01-2020	discussions	
28		onal change management	20-01-2020		
	Operall	Onar Change management	23-01-2020		

29	Functions of marketing	24-01-2020		
	roject Management			
PERT and (le to equip with different techniques in project management, ie CPM and project crashing			
	A. R. Aryasri, Management Science' TMH 2011			
30	Introduction to PERT and CPM	28-01-2020		
31	Development of network diagram	28-01-2020	į.	
32	Difference between pert and CPM	07-02-2020	Lecture interspersed with discussions	
33	Identifying critical part and probability	11-02-2020		
34	Project crashing simple problems	12-02-2020		
CO5:: Ab TB :: Dr. A	rategic Management le to equip with the concept and practical issues relating to strate A. R. Aryasri, Management Science' TMH 2011	egic management		
35	Vision, mission, goals and strategy	15-02-2020		
36	Elements of corporate planning process	16-02-2020	Lecture	
37	SWOT analysis	21-02-2020	interspersed	
38	Steps in strategic formulation and implementation	21-02-2020	with discussions	
39	Generic strategy and global strategy	23-02-2020		
40	Theories of MNCs ontemporary Management Practices	25-02-2020		
TB:: Dr. A	e to equip with the contemporary management practices, . R. Aryasri, Management Science' TMH 2011			
41				
	Basic concepts of MIS	26-02-2020		
42	Total quality management	26-02-2020 28-02-2020		
42 43				
42	Total quality management Just- In- Time, Six sigma Supply chain management	28-02-2020		
42 43	Total quality management Just- In- Time, Six sigma	28-02-2020 28-02-2020		
42 43 44	Total quality management Just- In- Time, Six sigma Supply chain management	28-02-2020 28-02-2020 02-03-2020		
42 43 44 45	Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning	28-02-2020 28-02-2020 02-03-2020 04-03-2020	Lecture	
42 43 44 45 46	Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources	28-02-2020 28-02-2020 02-03-2020 04-03-2020 07-03-2020	Lecture interspersed	
42 43 44 45 46 47	Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering	28-02-2020 28-02-2020 02-03-2020 04-03-2020 07-03-2020 11-03-2020	Lecture interspersed with	
42 43 44 45 46 47 48	Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking	28-02-2020 28-02-2020 02-03-2020 04-03-2020 07-03-2020 11-03-2020	interspersed	
42 43 44 45 46 47 48 49	Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking Balanced Score Card	28-02-2020 28-02-2020 02-03-2020 04-03-2020 07-03-2020 11-03-2020 11-03-2020 13-03-2020	interspersed with	
42 43 44 45 46 47 48 49 50	Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking Balanced Score Card Material Requirement Planning	28-02-2020 28-02-2020 02-03-2020 04-03-2020 07-03-2020 11-03-2020 11-03-2020 13-03-2020 14-03-2020	interspersed with	
42 43 44 45 46 47 48 49 50 51	Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking Balanced Score Card Material Requirement Planning Capability Maturity Model	28-02-2020 28-02-2020 02-03-2020 04-03-2020 07-03-2020 11-03-2020 11-03-2020 13-03-2020 14-03-2020 14-03-2020	interspersed with	
42 43 44 45 46 47 48 49 50 51 52	Total quality management Just- In- Time, Six sigma Supply chain management Enterprise resource planning Business process outsources Business process re-engineering Bench Marking Balanced Score Card Material Requirement Planning Capability Maturity Model Supply Chain Management	28-02-2020 28-02-2020 02-03-2020 04-03-2020 07-03-2020 11-03-2020 13-03-2020 14-03-2020 14-03-2020 17-03-2020	interspersed with	

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Signature of the Faculty

Signature of the HOD

SRK Institute of Technology ENIKEPADU. VIJAYAWADA-521 108

Course Title: MICROPROCESSORS AND MICROCONTROLLERS (R1632041)			
Section : A	Date: 18/11/19	Page No: 01 of 03	
Revision No: 00	Prepared By : B.S.S.TEJESH	Approved By : HOD	

Tools .	Rlack	hoard	PPTc	Moodle
1 0012 .	Diack	Duai u.	11 12	Module

No. of	TOPIC	Date Date	Mode of Delivery
Periods			

UNIT -I 8086/8088 MICROPROCESSORS

CO1: Student can understand the basics of 8086 microprocessors.

TB: A.K.Ray, K.M.Bhurchandi,"Advanced Microprocessors and Peripherals", Tata McGraw Hill Publications, 2000.

1.	Main features	19-24/11/19	
2.	pin diagram/description	26,26/11/19	
3.	8086 microprocessor family	27,28,29/11/19	
4.	8086 internalarchitecture	31/11/19	
5.	GPR REGISTERS	1/12/19	
6.	INDEX Registers, pointer registers	3,3/12/19	Lecture interspersed
7.	execution unit	4/12/19	with discussions
8.	interrupts and interrupt responses and flag registers	5/12/19	
9.	8086 system timing minimum mode	6/12/19	
10.	maximum mode configuration	7/12/19	
11.	Tutorial	8/12/19	

UNIT -II PROGRAMMING WITH 8086 MICROPROCESSOR

CO2: Able to develop programs for different addressing modes in machine and assembly languages.

TB: A.K.Ray, K.M.Bhurchandi,"Advanced Microprocessors and Peripherals", Tata McGraw Hill Publications, 2000.

12.	Program development steps	10/12/19	,
13.	Instructions	11-18/12/19	
14.	addressing modes	18/12/19	
15.	Tutorial	19/12/19	Lecture interspersed
16.	assembler directives	20,20,21/12/19	with discussions
17.	writing simple programs with an assembler	22/12/19	
18.	assembly language program development tools	26,27/12/19	
19.	Tutorial	28/12/19	

Section		CROPROCESSORS AND MICROCOM Date: 18/11/19		No: 02 of 03	
Davidian	The street of th	Prepared By : B.S.S.TEJESH		ved By : HOD	
	ack board,		Appro	veu by : HOD	
No. of	ick board,	TOPIC	Date	Mode of Delivery	
Periods		Torre	Date	wide of Benvery	
UNIT - I	III DAG	SIC AND SPECIAL PURPOSE PROGRAMMA	ADIE		
		D THEIR INTERFACING WITH 8086/88	ADLE		
			nd implement nuc	амоте	
		erface 8086 with different peripherals a			
		M.Bhurchandi,"Advanced Microproce	ssors and Periphe	rais", Tata McGraw	
	lications,		20/12/10	1	
20.		oftware programmable	29/12/19		
	timer/c		2/1/20		
21.		259 programmable interrupt controller	3/1/20		
22.		re and hardware interrupt applications	4/1/20		
23.		37a DMA controller	5/1/20		
24.	Tutoria		7/1/20		
25.	Intel 82	255 programmable peripheral interface	8/1/20	Lecture interspersed	
26.	keyboa	rd interfacing	8,10,10/1/20	with discussions	
27.	alphan	umeric displays- LED		W. 1.1.1 G. 1.5	
28.		ent display			
29.		exed 7-segment display, LCD			
30.		279 programmable keyboard/display	18,19,21,23/1/		
	Contro		20		
31.		motor,a/d,d/a	24,25,28/1/20		
TINITE I	• • •				
UNIT -I	IV AL				
~~ 1 ~.		OVANCED MICRO PROCESSORS	00206	00205	
	udent ca	n understand the advanced microproce			
TB: A.K	udent ca K.Ray, K	n understand the advanced microproce M.Bhurchandi,"Advanced Microproce			
TB: A.K	udent ca	n understand the advanced microproce M.Bhurchandi,"Advanced Microproce			
TB: A.k	udent ca K.Ray, K	n understand the advanced microproce. M.Bhurchandi,"Advanced Microproce, 2000.			
TB: A.k Hill Pub	udent car K.Ray, K. lications	n understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000.	essors and Periph		
TB: A.K Hill Pub 32. 33.	A.Ray, K. blications Introduced program	n understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. etion, etion, eming concepts	29/1/20 31,31/1/20		
TB: A.k Hill Pub 32. 33. 34.	C.Ray, K. collications Introduction program special	m understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. etion, ming concepts purpose registers	29/1/20 31,31/1/20 1/2/20		
TB: A.K Hill Pub 32. 33.	Introductions Introductions program special Pins 80	m understand the advanced microprocest. M.Bhurchandi,"Advanced Microprocest, 2000. etion, mming concepts purpose registers 386	29/1/20 31,31/1/20		
TB: A.K Hill Pub 32. 33. 34. 35. 36.	Introductions In	n understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. etion, mming concepts purpose registers 386	29/1/20 31,31/1/20 1/2/20 2/2/20	erals", Tata McGrav	
TB: A.k Hill Pub 32. 33. 34. 35.	Introductions In	m understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. etion, ming concepts purpose registers 386 to protected mode	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37.	Introductions In	m understand the advanced microprocest. M.Bhurchandi,"Advanced Microprocest, 2000. etion, mming concepts purpose registers 386 to protected mode mode	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37.	Introductions In	m understand the advanced microprocest. M.Bhurchandi,"Advanced Microprocest, 2000. Section, S	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20 7-11/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37.	Introductions In	m understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. etion, ming concepts purpose registers 386 to protected mode mode y paging mechanism etural	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37.	Introductions In	m understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. etion, ming concepts purpose registers 386 to protected mode mode y paging mechanism ctural ces between 80386 and 80486	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20 7-11/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37.	Introductions In	m understand the advanced microprocest. M.Bhurchandi,"Advanced Microprocest, 2000. The policy of the protected mode are paging mechanism of the policy of	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20 7-11/2/20 12,12/2/20	erals", Tata McGra	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37. 38. 39.	Introductions Introductions Introductions Introductions Introductions Introductions Introduction Special Pins 80 Tutorial Moving Virtual Memory Architectifferen micropic Tutorial	m understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. etion, ming concepts purpose registers 386 to protected mode mode y paging mechanism etural ces between 80386 and 80486 pocessors	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20 7-11/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37.	Introductions Introductions Introductions Introductions Introductions Introductions Introduction Special Pins 80 Tutorial Moving Virtual Memory Architectifferen micropic Tutorial	m understand the advanced microprocest. M.Bhurchandi,"Advanced Microprocest, 2000. The policy of the protected mode are paging mechanism of the policy of	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20 7-11/2/20 12,12/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37. 38. 39.	Introductions In	m understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. etion, ming concepts purpose registers 386 to protected mode mode y paging mechanism etural ces between 80386 and 80486 pocessors	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20 7-11/2/20 12,12/2/20	Lecture intersperse with discussions	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37. 38. 39. UNIT – CO5: Al	Introductions In	m understand the advanced microproces. M.Bhurchandi,"Advanced Microproces, 2000. Etion, Inming concepts purpose registers 386 It to protected mode mode y paging mechanism ctural ces between 80386 and 80486 focessors I MICROCONTROLLER Inderstand the microcontroller and able	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20 7-11/2/20 12,12/2/20 e to write the prog	Lecture intersperse with discussions	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37. 38. 39. UNIT – CO5: Al	Introductions In	m understand the advanced microproces. M.Bhurchandi, "Advanced Microproces, 2000. etion, ming concepts purpose registers 386 to protected mode mode y paging mechanism ctural ces between 80386 and 80486 cocessors MICROCONTROLLER anderstand the microcontroller and able mukh, "Microcontrollers", TATA McG	29/1/20 31,31/1/20 1/2/20 2/2/20 4/2/20 5,5/2/20 7-11/2/20 12,12/2/20 e to write the prog	Lecture intersperse with discussions	

Course Title: MICROPROCESSORS AND MICROCONTROLLERS (R1632041)			
Section : A	Date: 18/11/19	Page No: 03 of 03	
Revision No: 00	Prepared By : B.S.S.TEJESH	Approved By : HOD	

Tools:	Rlack	hoard	DDTe
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No. of Periods	TOPIC	Date	Mode of Delivery
42.	hardware concepts	19-22/2/20	
	input/output ports and circuits		
43.	External memory,	23/2/20	
44.	counters/timers	25,26,26/2/20	
45.	serial data input/output	28,28/2/20	
46.	interrupts.	1-5/3/20	
47.	Assembly language programming	7/3/20	
48.	Reg of 8051	8/3/20	Lecture interspersed
49.	Instructions	9/3/20	with discussions
50.	addressing modes	11/3/20	
51.	simple programs	12,12/3/20	
52.	Interfacing: keyboard		
53.	Interfacing displays (LED, 7-segment display unit)	14/3/20	
54.	A/D and D/A converters		
55.	Tutorial	15/3/20	

UNIT - VI PIC MICROCONTROLLERS AND ARM 32-BIT MICROCONTROLLER

CO6: Student can understand PIC microcontroller and ARM processors.

TB: Ajay V Deshmukh,"Microcontrollers", TATA McGraw Hill publications, 2012.

Raj Kamal,"Microcontrollers", Pearson publications, 2009.

56.	Introduction	16/3/20	
57.	characteristics of PIC microcontroller	17/3/20	
58.	PIC microcontroller families	18/3/20	
59.	memory organization	19/3/20	Lecture interspersed
60.	parallel and serial input and output		with discussions
61.	Interrupts,	19/3/20	
62.	PIC 16F877 architecture	20,21/3/20	
63.	Instruction set of the PIC 16F877	22,23/3/20	

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SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA

Course Title: MI	CROPROCESSORS AND MICROCON	TROLLERS (R1632041)
Section: B	Date: 18/11/19	Page No: 01 of 03
Revision No : 00 Prepared By : B.S.S.TEJESH Approved By : HOD		
Tools : Black board.		

No. of	TOPIC	Date	Mode of Delivery
Periods			

UNIT -I 8086/8088 MICROPROCESSORS

CO1: Student can understand the basics of 8086 microprocessors.

TB: A.K.Ray, K.M.Bhurchandi,"Advanced Microprocessors and Peripherals", Tata McGraw Hill Publications, 2000.

1.	Main features	19-24/11/19	
2.	pin diagram/description	26,26/11/19	
3.	8086 microprocessor family	27,28,29/11/19	
4.	8086 internalarchitecture	31/11/19	
5.	GPR REGISTERS	1/12/19	
6.	INDEX Registers, pointer registers	3,3/12/19	Lecture interspersed
7.	execution unit	4/12/19	with discussions
8.	interrupts and interrupt responses and flag registers	5/12/19	
9.	8086 system timing minimum mode	6/12/19	
10.	maximum mode configuration	7/12/19	
11.	Tutorial	8/12/19	

UNIT -II PROGRAMMING WITH 8086 MICROPROCESSOR

CO2: Able to develop programs for different addressing modes in machine and assembly languages.

TB: A.K.Ray, K.M.Bhurchandi,"Advanced Microprocessors and Peripherals", Tata McGraw Hill Publications, 2000.

12.	Program development steps	10,10/12/19	
13.	instructions	11-17/12/19	
14.	addressing modes	18/12/19	
15.	Tutorial	19/12/19	Lecture interspersed
16.	assembler directives	20,21/12/19	with discussions
17.	writing simple programs with an assembler	22/12/19	
18.	assembly language program development tools	26,27/12/19	
19.	Tutorial	28/12/19	

Contina	Title: MICROPROCESSORS AND MICROCO			
V. C.	: B Date: 18/11/19		No: 02 of 03	
	No: 00 Prepared By: B.S.S.TEJESH	Appro	oved By: HOD	
	ack board, PPTs		17 1 07 11	
No. of	TOPIC	Date	Mode of Delivery	
Periods UNIT -	III DAGIC AND CRECIAL DUDDOCT DOCT AND			
		ABLE		
	ERALS AND THEIR INTERFACING WITH 8086/88			
	ble to interface 8086 with different peripherals a			
TB : A.I	K.Ray, K.M.Bhurchandi,"Advanced Microproce	essors and Periphe	erals", Tata McGraw	
	olications, 2000.	20/10/10	T	
20.	8254 software programmable	29/12/19		
21.	timer/counter	2/1/20		
	Intel 8259 programmable interrupt controller	2/1/20	-	
22.	software and hardware interrupt applications	3/1/20		
	Intel8237a DMA controller	4/1/20		
24.	Tutorial	5/1/20		
25.	Intel 8255 programmable peripheral interface	7/1/20	Lecture interspersed	
26.	keyboard interfacing	8,9,10/1/20	with discussions	
27.	alphanumeric displays- LED			
28.	7-segment display			
29.	multiplexed 7-segment display, LCD			
30.	Intel 8279 programmable keyboard/display	18,19,21,22/1/		
	controller	20		
31.	stepper motor,a/d,d/a	23,24/1/20		
CO4: St	IV ADVANCED MICRO PROCESSORS udent can understand the advanced microprocess	ssor 80386 and co	processor 80387.	
TB: A.k	IV ADVANCED MICRO PROCESSORS udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000.			
TB: A.k Hill Pub	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi," Advanced Microprocestications, 2000.	essors and Periph		
TB: A.k	udent can understand the advanced microprocests. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction,	essors and Peripheral 25/1/20		
TB: A.k Hill Pub 32.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts	25/1/20 28/1/20		
TB: A.K Hill Pub 32. 33.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers	25/1/20 28/1/20 29/1/20		
TB: A.K Hill Pub 32. 33. 34.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts	25/1/20 28/1/20		
TB: A.k Hill Pub 32. 33. 34. 35.	udent can understand the advanced microprocests. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386	25/1/20 28/1/20 29/1/20	erals", Tata McGrav	
TB: A.k Hill Pub 32. 33. 34. 35. 36. 37.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial	25/1/20 28/1/20 29/1/20 30/1/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial Moving to protected mode Virtual mode Memory paging mechanism	25/1/20 28/1/20 29/1/20 30/1/20 31/1/20	erals", Tata McGrav	
TB: A.k Hill Pub 32. 33. 34. 35. 36. 37.	udent can understand the advanced microprocests. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial Moving to protected mode Virtual mode Memory paging mechanism Architectural	25/1/20 28/1/20 29/1/20 30/1/20 31/1/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial Moving to protected mode Virtual mode Memory paging mechanism	25/1/20 28/1/20 29/1/20 30/1/20 31/1/20 1/2/20 2-6/2/20	erals", Tata McGrav	
TB: A.k Hill Pub 32. 33. 34. 35. 36. 37.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial Moving to protected mode Virtual mode Memory paging mechanism Architectural differences between 80386 and 80486 microprocessors	25/1/20 28/1/20 29/1/20 30/1/20 31/1/20 1/2/20 2-6/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37. 38. 39.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial Moving to protected mode Virtual mode Memory paging mechanism Architectural differences between 80386 and 80486 microprocessors Tutorial	25/1/20 28/1/20 29/1/20 30/1/20 31/1/20 1/2/20 2-6/2/20	erals", Tata McGrav	
TB: A.k Hill Pub 32. 33. 34. 35. 36. 37.	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial Moving to protected mode Virtual mode Memory paging mechanism Architectural differences between 80386 and 80486 microprocessors Tutorial	25/1/20 28/1/20 29/1/20 30/1/20 31/1/20 1/2/20 2-6/2/20 7,8/2/20	erals", Tata McGrav	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37. 38. 39. UNIT -V	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial Moving to protected mode Virtual mode Memory paging mechanism Architectural differences between 80386 and 80486 microprocessors Tutorial W 8051 MICROCONTROLLER politity to understand the microcontroller and ablestications.	25/1/20 28/1/20 29/1/20 30/1/20 31/1/20 1/2/20 2-6/2/20 7,8/2/20 e to write the prog	Lecture interspersed with discussions	
TB: A.K Hill Pub 32. 33. 34. 35. 36. 37. 38. 39. UNIT -V CO5: Al	udent can understand the advanced microprocest. Ray, K.M.Bhurchandi,"Advanced Microprocestications, 2000. Introduction, programming concepts special purpose registers Pins 80386 Tutorial Moving to protected mode Virtual mode Memory paging mechanism Architectural differences between 80386 and 80486 microprocessors Tutorial W 8051 MICROCONTROLLER	25/1/20 28/1/20 29/1/20 30/1/20 31/1/20 1/2/20 2-6/2/20 7,8/2/20 e to write the prog	Lecture interspersed with discussions	

Course Title: MICROPROCESSORS AND MICROCONTROLLERS (R1632041)				
Section: B Date: 18/11/19 Page No: 03 of 0				
Revision No: 00	Prepared By: B.S.S.TEJESH	Approved By : HOD		

Tools: Black boa	ard, PPTs
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No. of Periods	TOPIC	Date	Mode of Delivery
42.	hardware concepts	15-20/2/20	
	input/output ports and circuits		
43.	External memory,	21/2/20	
44.	counters/timers	22,23/2/20	
45.	serial data input/output	25/2/20	
46.	interrupts.	26,27/2/20	
47.	Assembly language programming	28/2/20	
48.	Reg of 8051	1/3/20	Lecture interspersed
49.	Instructions	2/3/20	with discussions
50.	addressing modes '	5/3/20	
51.	simple programs	6/3/20	
52.	Interfacing: keyboard		
53.	Interfacing displays (LED, 7-segment display unit)	7/3/20	
54.	A/D and D/A converters		
55.	Tutorial	8/3/20	

UNIT - VI PIC MICROCONTROLLERS AND ARM 32-BIT MICROCONTROLLER

CO6: Student can understand PIC microcontroller and ARM processors.

TB: Ajay V Deshmukh,"Microcontrollers", TATA McGraw Hill publications, 2012.

Rai	Kamal.	"Microcontr	ollers".	Pearson	publications.	2009
A 600	T FOR THE SET	TITLE OCCURE	OHICE S	I Carson	Dublications.	4007.

56.	Introduction	9/3/20	
57.	characteristics of PIC microcontroller	11/3/20	
58.	PIC microcontroller families	12/3/20	
59.	memory organization	13/3/20	Lecture interspersed
60.	parallel and serial input and output		with discussions
61.	Interrupts,	14/3/20	
62.	PIC 16F877 architecture	15-18/3/20	
63.	Instruction set of the PIC 16F877	19-23/3/20	

Signature of the Faculty

S. Sri Goum Signature of the HOD

SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA

TENTATIVE LESSON PLAN MICROWAVE ENGINEERING (R1632042)

Section : Sec	MICROWAVE ENGINEERING (R1632042) I Date: 18/11/2019	Page No:	01 of 03
Revision No:		Approved By: HOD	
Tools: Black l			
No. of	TOPIC	Date	Mode of
Periods	CONTACTOR AND ANGRAIGGION LINES		Delivery
UNIT-I MI	CROWAVE TRANSMISSION LINES	. 4 4	aauur tham
CO1: Study a	bout the microwave frequencies and waveguides th	at are used to	carry them
various paran	neters and characteristics of the rectangular waveg	uides.	
TB: "Microw	ave Devices and Circuits", Samuel Y. Liao, 3rd edition	on, Pearson Ed	ucation
1	Microwave transmission lines: introduction	18/11/2019	
2	Microwave Spectrum and Bands, Applications of	18/11/2019	
	Microwaves	19/11/2019	
3	Rectangular Waveguides	19/11/2019	
4	TE mode analysis	22/11/2019	
5	TM mode analysis	23/11/2019	
6	Expressions for Fields	25/11/2019	Lecture
7	Characteristic Equation	25/11/2019	
8	Cut-off Frequencies, Filter Characteristics	26/11/2019	intersperse with
9	Dominant and Degenerate Modes	26/11/2019	discussion
10	Sketches of TE and TM mode fields	29/11/2019	uiscussioi
11	Phase and Group Velocities, Wavelengths	30/11/2019	
12	Impedance Relations	5/12/2019	
13	Power Transmission and Power Losses	6/12/2019	
14	Impossibility of TEM mode	10/12/2019	
15	Related Problems	11/12/2019	
	RCULAR WAVEGUIDES		
CO2: Study	the various parameters and characteristics of	the circular	waveguide
	nes and cavity resonators.		
TR. "Microw	vave Devices and Circuits", Samuel Y. Liao, 3 rd editi	on, Pearson Ed	lucation
16	Nature of Fields	12/12/2019	
17	Characteristic Equation	13/12/2019	
18	Dominant and Degenerate Modes	19/12/2019	Lecture
19	Micro strip Lines– Introduction	19/12/2019	interspers
20	Z _o Relations, Effective Dielectric Constant	20/12/2019	with
20	Lo relations, Effective Diolocatic Constant	24/12/2019	discussion

Cavity Resonators

Dominant Modes and Resonant Frequencies

Q factor and Coupling Coefficients

22

23

24

31/12/2019

31/12/2019

3/1/2020

No. of Periods	TOPIC	Date	Mode of Delivery
25	Excitation techniques	4/1/2020	2011.019
26	Related Problems	4/1/2020	
	MICROWAVE TUBES		
CO3: Analyz	ce mathematically the operation of the various tubes of microwave frequencies. ave Devices and Circuits", Samuel Y. Liao, 3 rd edition, Pea		
27	Limitations and Losses of conventional tubes	6/1/2020	
28	Microwave tubes – O type and M type classifications	6/1/2020	
29	O-type tubes : 2 Cavity Klystrons	7/1/2020	
30	Structure, Reentrant Cavities	9/1/2020	
31	Velocity Modulation Process	10/1/2020	
32	Applegate Diagram, Bunching Process	10/1/2020	
33	Expressions for o/p Power and Efficiency	27/1/2020	Lecture
34	Reflex Klystrons – Structure,	27/1/2020	intersperse
35	Applegate Diagram and Principle of working	28/1/2020	with
36	Mathematical Theory of Bunching	28/1/2020	discussion
37	Power Output, Efficiency	31/1/2020	
38	Electronic Admittance, Oscillating Modes	3/2/2020	
39	Electronic and Mechanical Tuning	7/2/2020	
40	Related Problems	8/2/2020	
UNIT-IV I	HELIX TWTS		
field tubes fo TB: "Microw	the significance, types and characteristics of slow war the transmission of the microwave frequencies. vave Devices and Circuits", Samuel Y. Liao, 3 rd edition		
41	Significance, Types		
42	Characteristics of Slow Wave Structures	16/3/2020 16/3/2020	
43	Structure of TWT		
44	Suppression of Oscillations	17/3/2020	Lecture
45	Nature of the four Propagation Constants	17/3/2020	intersperse
46	M-type Tubes Introduction, Cross-field effects	17/3/2020	with
47	Magnetrons – Different Types	18/3/2020	discussion
48	8-Cavity Cylindrical Travelling Wave	18/3/2020	discussion
49	Magnetron – Hull Cut-off and Hartree Conditions	19/3/2020	
50	Modes of Resonance, PI-Mode Operation	19/3/2020	
51	Separation of PI-Mode, o/p characteristics	19/3/2020	
52	Related Problems	19/3/2020	
CO5: Imple	WAVEGUIDE COMPONENTS AND APPLICATIO ment waveguide components and devices for various ave and Radar Engineering", G Sasi Bhushana Rao, Pear	applications.	
	C L' Mahariana Dala Lasa	10/2/2020	

Coupling Mechanisms: Probe, Loop
Waveguide Discontinuities: Waveguide irises,

53 54 10/2/2020

11/2/2020

No. of Periods	TOPIC	Date	Mode of Delivery
55	Waveguide Attenuators: Resistive Card type	14/2/2020	
56	Waveguide Phase Shifters	14/2/2020	
57	S-Matrix— Significance, Formulation & Properties	18/2/2020	
58	S-Matrix Calculations for H-plane Tee	24/2/2020	Lecture
59	S-Matrix Calculations for E-plane Tee	24/2/2020	interspersed
60	Magic Tee, Hybrid Ring	25/2/2020	with
61	Directional Couplers – 2Hole, Bethe Hole	28/2/2020	discussions
62	Ferrite Components-Faraday Rotation	28/2/2020	
63	S-Matrix Calculations for Gyrator, Isolator, Circulator	29/2/2020	
64	Related Problems	2/3/2020	

UNIT-VI MICROWAVE SOLID STATE DEVICES

CO6: Analyze the significance, types and characteristics of microwave solid state devices and acquire knowledge in various microwave measurements.

TB1: "Microwave Devices and Circuits", Samuel Y. Liao, 3rdedition, Pearson Education

TB2: "Microwave and Radar Engineering", G Sasi Bhushana Rao, Pearson Education

IDZ. MICIOWA	te and Italian Engineering, 9 such Engineering, 100	arbon Education	
65	Introduction, Classification, Applications	2/3/2020	
66	TEDs -Gunn Diode – Principle	3/3/2020	
67	RWH Theory, Characteristics	3/3/2020	Lecture
68	Basic Modes of Operation, Oscillation Modes	7/3/2020	interspersed
69	Avalanche Transit Time Devices	9/3/2020	with
70	IMPATT Diodes - Principle of Operation and Characteristics	10/3/2020	discussions
71	TRAPATT Diodes- Principle of Operation and Characteristics	10/3/2020	
72	Related Problems	9/3/2020	
73	Description of Microwave Bench	13/3/2020	
74	Different Blocks and their Features	13/3/2020	
75	Microwave Power Measurement – Bolometer	16/3/2020	
76	Measurement of Attenuation, Frequency, VSWR	16/3/2020	
77	Cavity Q, Impedance Measurements	16/3/2020	

Signature of Faculty

Signature of HOD

SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA

TENTATIVE LESSON PLAN MICROWAVE ENGINEERING (R1632042)

Section : Sec	MICROWAVE ENGINEERING (R1632042) II Date: 18/11/2019	Page No:	01 of 03
Revision No:		Approved By : HOL	
Fools: Black b			
No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I MI	CROWAVE TRANSMISSION LINES		
CO1. Study of	bout the microwave frequencies and waveguides th	at are used to	carry then
i nawan	neters and characteristics of the rectangular waveg	uides.	
arious paran	ave Devices and Circuits", Samuel Y. Liao, 3 rd edition	n. Pearson Edi	ucation
	Microwave transmission lines: introduction	18/11/2019	
1 - 1			
2	Microwave Spectrum and Bands, Applications of	20/11/2019	
Car sout No.	Microwaves	21/11/2019	
3	Rectangular Waveguides	21/11/2019	
4	TE mode analysis	23/11/2019	
5	TM mode analysis	23/11/2019	
6	Expressions for Fields	25/11/2019	Lecture
7	Characteristic Equation	27/11/2019	interspers
8	Cut-off Frequencies, Filter Characteristics	28/11/2019	with
9	Dominant and Degenerate Modes	28/11/2019	discussio
10	Sketches of TE and TM mode fields	30/11/2019	
11	Phase and Group Velocities, Wavelengths	30/11/2019	
12	Impedance Relations	2/12/2019	
13	Power Transmission and Power Losses	4/12/2019	
14	Impossibility of TEM mode	5/12/2019	
15	Related Problems	5/12/2019	
IINIT-II CI	RCULAR WAVEGUIDES		
CO2: Study	the various parameters and characteristics of	the circular	waveguid
microstrin lir	es and cavity resonators.		
TR: "Microw	vave Devices and Circuits", Samuel Y. Liao, 3 rd edit	ion, Pearson Ed	lucation
16	Nature of Fields	7/12/2019	
17	Characteristic Equation	7/12/2019	
18	Dominant and Degenerate Modes	9/12/2019	Lectur
19	Micro strip Lines– Introduction	11/12/2019	intersper
20	Z _o Relations, Effective Dielectric Constant	12/12/2019	with
21	Losses, Q factor	12/12/2019	discussion
22	Cavity Resonators	16/12/2019	
23	Dominant Modes and Resonant Frequencies	18/12/2019	
24	Q factor and Coupling Coefficients	19/12/2019	

No. of Periods	TOPIC	Date	Mode of Delivery
25	Excitation techniques	19/12/2019	
26	Related Problems	21/12/2019	

UNIT-III MICROWAVE TUBES

CO3: Analyze mathematically the operation of the various tubes or sources used for the transmission of microwave frequencies.

TB: "Microwave Devices and Circuits", Samuel Y. Liao, 3rd edition, Pearson Education

27	Limitations and Losses of conventional tubes	21/12/2019	
28	Microwave tubes – O type and M type classifications	23/12/2019	
29	O-type tubes : 2 Cavity Klystrons	26/12/2019	
30	Structure, Reentrant Cavities	28/12/2019	
31	Velocity Modulation Process	28/12/2019	
32	Applegate Diagram, Bunching Process	30/12/2019	
33	Expressions for o/p Power and Efficiency	2/1/2020	Lecture
34	Reflex Klystrons – Structure,	2/1/2020	interspersed
35	Applegate Diagram and Principle of working	4/1/2020	with
36	Mathematical Theory of Bunching	4/1/2020	discussions
37	Power Output, Efficiency	6/1/2020	
38	Electronic Admittance, Oscillating Modes	8/1/2020	
39	Electronic and Mechanical Tuning	9/1/2020	
40	Related Problems	9/1/2020	

UNIT-IV HELIX TWTS

CO4: Study the significance, types and characteristics of slow wave structures and cross field tubes for the transmission of the microwave frequencies.

TB: "Microwave and Radar Engineering", G Sasi Bhushana Rao, Pearson Education

41	Significance, Types	4/3/2020			
42	Characteristics of Slow Wave Structures	5/3/2020			
43	Structure of TWT	7/3/2020			
44	Suppression of Oscillations	9/3/2020			
45	Nature of the four Propagation Constants	11/3/2020 Lectur			
46	M-type Tubes Introduction, Cross-field effects	12/3/2020 intersper			
47	Magnetrons – Different Types	12/3/2020 with			
48	8-Cavity Cylindrical Travelling Wave	16/3/2020 discussion			
49	Magnetron – Hull Cut-off and Hartree Conditions	18/3/2020			
50	Modes of Resonance, PI-Mode Operation	19/3/2020			
51	Separation of PI-Mode, o/p characteristics	19/3/2020			
52	Related Problems	21/3/2020			

UNIT-V WAVEGUIDE COMPONENTS AND APPLICATIONS

CO5: Implement waveguide components and devices for various applications.

TB: "Microwave and Radar Engineering", G Sasi Bhushana Rao, Pearson Education

53	Coupling Mechanisms: Probe, Loop	27/1/2020
54	Waveguide Discontinuities: Waveguide irises,	29/1/2020

No. of Periods	TOPIC	Date	Mode of Delivery	
55	Waveguide Attenuators: Resistive Card type	30/1/2020		
56	Waveguide Phase Shifters	30/1/2020		
57	S-Matrix— Significance, Formulation & Properties	1/2/2020		
58	S-Matrix Calculations for H-plane Tee	Lecture		
59	S-Matrix Calculations for E-plane Tee	interspersed		
60	Magic Tee, Hybrid Ring	with		
61	Directional Couplers – 2Hole, Bethe Hole	6/2/2020 discussio		
62	Ferrite Components- Faraday Rotation	6/2/2020		
63	S-Matrix Calculations for Gyrator, Isolator, Circulator	10/2/2020		
64	Related Problems	12/2/2020		

UNIT-VI MICROWAVE SOLID STATE DEVICES

CO6: Analyze the significance, types and characteristics of microwave solid state devices and acquire knowledge in various microwave measurements.

TB1: "Microwave Devices and Circuits", Samuel Y. Liao, 3rdedition, Pearson Education

TB2: "Microwave and Radar Engineering", G Sasi Bhushana Rao, Pearson Education

IDZ. MICIOW	ave and italian Engineering, o cast Drusham italio, i e	arbon Education					
65	Introduction, Classification, Applications	Introduction, Classification, Applications 13/2/2020					
66	TEDs -Gunn Diode – Principle	13/2/2020					
67	RWH Theory, Characteristics	15/2/2020 Lecture					
68	Basic Modes of Operation, Oscillation Modes	17/2/2020 interspersed					
69	Avalanche Transit Time Devices	19/2/2020 with					
70	IMPATT Diodes - Principle of Operation and	20/2/2020 discussi					
	Characteristics	20/2/2020					
71	TRAPATT Diodes- Principle of Operation and	22/2/2020					
and the second	Characteristics						
72	Related Problems	24/2/2020					
73	Description of Microwave Bench	26/2/2020					
74	Different Blocks and their Features	27/2/2020					
75	Microwave Power Measurement – Bolometer	27/2/2020					
76	Measurement of Attenuation, Frequency, VSWR	29/2/2020					
77	Cavity Q, Impedance Measurements	2/3/2020					

Signature of Faculty

Signature of HOD

PRINCIPAL SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA

Course	Title: VI	SI DESIGN (R1632043)	AIN: K	103204	13. companyones, standard may a may
Section	: A	Date: 18-11-2019		Page N	No: 01 of 03
		Prepared By: K.VENKATESWARA			
Tools: B	lack board. I	PPTs, Moodle	MU	Typhio	ved By : HOD
No. of		TOPIC	D.	ate	Mode of Delivery
Period			J	110	wiode of Delivery
UNIT -		oduction, Electrical properties			
		understand the basic electrical propert	ioc		
					D
		araghian, Douglas and A. Pucknell and S nited, 2005 Edition" ESSENTIALS OF V			
1.	Introdu	ction to IC technology, MOS related	I		
	VLSIT	Sechnology, Basic MOS transistors			
2.	Enhanc	ement and Depletion modes, IC			
		tion process			
3.		nd CMOS fabrication process			
		· · · · · · · · · · · · · · · · · · ·		4	
4.	Bi-CM	OS technology, comparison of CMOS &	Fron	n	
	Bipolar	237	18-1		
5.	Ids vers	sus Vds relationships	t		
6.	Aspects	s of MOS Vt, Trans & Output	05-1		Lecture interspersed
	conduc				with discussions
7.	Pass tra	nsistor, NMOS inverter			
8.	Pull-Up	to Pull-down ratio for NMOS inverter			
9.	driven b	by another NMOS inverter			*
	Alterna	tive forms of Pull-Ups			
10.	CMOS	inverter, Circuit model, Bi-CMOS			
	inverter				
11.	Latch u	p in CMOS, latch up susceptibility			
UNIT -		& Bi-CMOS design Process			
CO2: A		elop designing methodologies of MOS de	vices		
ГВ: Ка	mran Eshr	aghian, Douglas and A. Pucknell and Si	olah Feh	raghian	Duantias II all af
India P	rivate Lim	ited, 2005 Edition" ESSENTIALS OF V	T CT CTD	r agman	AND CASCEPAGE
12.	MOS lay	erc	LSI CIK	CUIIS	AND SYSTEMS"
13.	The state of the s				
13.	Stick dia	grains			
14.	Dogica	alog and levents			
14.	Design n	iles and layouts	Fron		Lecture interspersed
15	General	hearintions on design -1-	05-12		with discussions
15.		observations on design rules	to		
16.	CMOS/D	ble metal double poly	20-12	-19	
17.		iCMOS rules			
18.		puble metal double poly CMOS rules			
19.	Layout di	agrams of NAND and NOR gates and			
	CMOS in				
20	Symbolic	diagrams-translation to mask forms			

Course	Title: VLSI DESIGN (R1632043)			
Section			Page	No : 02 of 03
Revision	n No: 00 Prepared By:: K.VENKATESWARA	RAO	Appr	oved By : HOD
Tools: Bla	ack board, PPTs			
No. of	TOPIC	Da	ate	Mode of Delivery
Periods				
UNIT -	어린 아이는 아이는 이 아이들에게 살아가 있다면 아이를 하게 하는 것이 되었다면 하는데 그래요			
CO3: A	ble to interface the design methodologies with fab	rication 1	procedu	res.
TB: Ka	mran Eshraghian, Douglas and A. Pucknell and S	Sholeh Es	hraghi	n Prentice Hell of
India Pi	rivate Limited, 2005 Edition" ESSENTIALS OF V	LSI CIR	CUITS	AND SVSTEMS"
21.	Sheet resistance & application to MOS		COTTO	ANDSISTEMS
	transistors and inverters			
22.	Area capacitance of layers			
23.	Standard unit of capacitance			
24.	Delay unit, Inverter delays	N/- •		
25.	Propagation delays, wiring capacitances			
26.	Fan-in & Fan-Out characteristics, choice of	fro		
	layers	23-	12-19	
27.	Transistor switches	t	0	Lecture interspersed
28.	Realization of gates using NMOS, PMOS and	10-0	1-20	with discussions
	CMOS technologies	100	Will discussions	
29.	Sheet resistance & application to MOS			
	transistors and inverters			
30.	Gate Logic ,Transmission gate			
31.	Limits due to sub-threshold currents			
32.	Current density limits on logic levels and supply			
	voltages			
UNIT -I		l nut ainani	40	
	o mpat and Out	out circui	its	
TD. T2.	udent can understand the advanced design proced	lures with	n partit	ioning.
1B: 12:	CMOS Digital Integrated Circuits Analysis and I	Design-Su	ung-Mo	Kang, Yusuf
	i, Tata McGraw-Hill Education, 2003.			
33.	Fault types and Models			
34. 35.	Controllability and Observability			
35. 36.	Ad Hoc Testable Design Techniques	fron		
37.	Built-In Self Test techniques	The state of the s	11-20	
38.		to	1-20	
	Scan Based Techniques		2-20	Lecture interspersed
39.	ESD Protection, Input Circuits			with discussions
40.	Output Circuits and L(di/dt) Noise			
41.	On-Chip clock Generation and Distribution.			
UNIT –V	-			
CO5: Ab	ility to understand the constrains in the front end	design o	f the cir	cuits.
TB: T2:	CMOS Digital Integrated Circuits Analysis and D	esian Si	ing Ma	Vana Vusus
Leblebici	, Tata McGraw-Hill Education, 2003	coign- 30	mg-M10	Nang, Yusuf
42.	of a construction than the second of the sec	range and consider the second con-		· ·
	Basic FPGA architecture, FPGA configuration			Lecture interspersed
The same and the same to the basel we	A STATE OF THE STA		50.50 (2.51)	with discussions

Course Title: VLS	SI DESIGN (R1632043)	
Section: A	Date: 18-11-2019	Page No: 03 of 03
Revision No: 00	Prepared By :: K.VENKATESWARA RAO	Approved By : HOD

Tools	•	Black	board,	PPTs
I OOIS		Diach	Dual u.	1113

No. of Periods	TOPIC	Date	Mode of Delivery
43.	FPGA design flow		
44.	FPGA Technologies		
45.	FPGA families- Altera Flex 8000 FPGA, Altera Flex 10	from 08-02-20	
46.	Xilinx XC4000 series FPGA ,Spartan II	to 26-02-20	
47.	Xilinx Spartan XL FPGA, Vertex FPGA	20-02-20	
48.	Case Studies: FPGA Implementation Of Half Adder		Lecture interspersed with discussions
49.	Case Studies: FPGA Implementation Of Full Adder		
50.	Logic synthesis		
51.	RTL synthesis, High level Synthesis		the contract of the contract o

UNIT - VI Introduction to Low Power VLSI Design

CO6: Student can design the basic models of FPGA for the typical applications of basic circuits.

TB: T2: CMOS Digital Integrated Circuits Analysis and Design-Sung-Mo Kang, Yusuf Leblebici, Tata McGraw-Hill Education, 2003.

52.	Introduction to DIC design deep submicron digital		
53.	Over view of power consumption		
54.	Low -power design through voltage scaling	from 29-02-20	
55.	Estimation and optimization of switching activity	to 17-03-20	Lecture interspersed
56.	Reduction of switching capacitance		with discussions
57.	Interconnect Design		
58.	Power Grid and Clock Design		

Signature of the Faculty
Date: 16-11-20

Signature of the HOD
Date: 10|2|21

PRINCIPAL SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA TENTATIVE LESSON PLAN: R1632043

Course Title: VLSI DESIGN (R1632043)

	: B Date: 18-11-2019		ge No: 01 of 03
Tools: Bl:	n No: 00 Prepared By: K.VENKATESWARA Fack board, PPTs, Moodle	KAO Ap	proved By: HOD
No. of Periods	TOPIC	Date	Mode of Delivery
TB: Ka	I Introduction, Electrical properties tudent can understand the basic electrical propert imran Eshraghian, Douglas and A. Pucknell and Srivate Limited, 2005 Edition" ESSENTIALS OF V	Sholeh Eshrag	
1.	Introduction to IC technology, MOS related VLSI Technology, Basic MOS transistors		ZS THAD STSTEMS
2.	Enhancement and Depletion modes, IC production process		
3.	MOS and CMOS fabrication process		
4.	BiCMOS technology, comparison of CMOS & Bipolar	from	
5. 6.	Ids versus Vds relationships	18-11-19 to 05-12-19	Lecture interspersed
	Aspects of MOS Vt , Trans & Output conductance	03-12-19	with discussions
7.	Pass transistor, NMOS inverter		
8. 9.	Pull-Up to Pull-down ratio for NMOS inverter driven by another NMOS inverter		
	Alternative forms of Pull-Ups		
10.	CMOS inverter, Circuit model, Bi-CMOS inverter		
11.	Latch up in CMOS, latchup susceptibility		
B: Kan	ole to develop designing methodologies of MOS denran Eshraghian, Douglas and A. Pucknell and Shivate Limited, 2005 Edition" ESSENTIALS OF V	oleh Eshragh	ian, Prentice-Hall of S AND SYSTEMS"
13.	MOS layers Stick diagrams		
14.	Design rules and layouts		
15.	General observations on design rules	from	Lecture interconcered
16.	2μm double metal double poly	10-12-19	Lecture interspersed with discussions
17.	CMOS/BiCMOS rules	to 20-12-19	With discussions
18.	1.2µm double metal double poly CMOS rules	20-12-17	
19.	Layout diagrams of NAND and NOR gates and CMOS inverters		
20	Symbolic diagrams-translation to mask forms	er andere er	and the state of t

TENTATIVE LESSON PLAN: R1632043 Course Title: VLSI DESIGN (R1632043)

U. UU I Frenzred By K. VRINKA I K.S. WARA I			(o: 02 of 03	
o: 00 Prepared By:: K.VENKATESWARA I	RAO	Appro	ved By : HOD	
TOPIC	Date	e T	Mode of Delivery	
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ran Eshraghian, Douglas and A. Pucknell and Sl	holeh Esh	raghia	n, Prentice-Hall of	
Sheet resistance & application to MOS				
	£			
Fan-in & Fan-Out characteristics, choice of layers	to			
Transistor switches	27-01-20		Lecture intersperse with discussions	
Realization of gates using NMOS, PMOS and CMOS technologies				
Scaling models, scaling factors for device parameters				
Gate Logic ,Transmission gate				
Limits due to sub-threshold currents				
Current density limits on logic levels and supply voltages				
	nut circuit	· s		
[18] 이용 [18] [18] [18] [18] [18] [18] [18] [18]			oning	
MOS Digital Integrated Circuits Analysis and De Tata McGraw- Hill Education, 2003.	esign- Su	ng-Mo	Kang, Yusuf	
ault types and Models				
Controllability and Observability				
1II - T - 4 11 D ' T 1 '				
ad Hoc Testable Design Techniques	from			
Built-In Self Test techniques ,Scan Based	from 29-01			
uilt-In Self Test techniques ,Scan Based echniques	29-01		T	
suilt-In Self Test techniques ,Scan Based echniques SD Protection, Input Circuits		-20		
uilt-In Self Test techniques ,Scan Based echniques	29-01 to	-20	Lecture intersperse with discussions	
	to interface the design methodologies with fabre on Eshraghian, Douglas and A. Pucknell and Slate Limited, 2005 Edition" ESSENTIALS OF V. Sheet resistance & application to MOS transistors and inverters Area capacitance of layers Standard unit of capacitance Delay unit, Inverter delays Propagation delays, wiring capacitances Fan-in & Fan-Out characteristics, choice of layers Transistor switches Realization of gates using NMOS, PMOS and CMOS technologies Scaling models, scaling factors for device parameters Gate Logic, Transmission gate Limits due to sub-threshold currents Current density limits on logic levels and supply voltages Design for Testability, Chip Input and Output ent can understand the advanced design proced MOS Digital Integrated Circuits Analysis and D	to interface the design methodologies with fabrication proman Eshraghian, Douglas and A. Pucknell and Sholeh Eshate Limited, 2005 Edition" ESSENTIALS OF VLSI CIRC Sheet resistance & application to MOS transistors and inverters Area capacitance of layers Standard unit of capacitance Delay unit, Inverter delays Propagation delays, wiring capacitances Fan-in & Fan-Out characteristics, choice of layers Transistor switches Realization of gates using NMOS, PMOS and CMOS technologies Scaling models, scaling factors for device parameters Gate Logic, Transmission gate Limits due to sub-threshold currents Current density limits on logic levels and supply voltages Design for Testability, Chip Input and Output circuit ent can understand the advanced design procedures with MOS Digital Integrated Circuits Analysis and Design-Sun	to interface the design methodologies with fabrication procedure an Eshraghian, Douglas and A. Pucknell and Sholeh Eshraghian ate Limited, 2005 Edition" ESSENTIALS OF VLSI CIRCUITS. Sheet resistance & application to MOS transistors and inverters Area capacitance of layers Standard unit of capacitance Delay unit, Inverter delays Propagation delays, wiring capacitances Fan-in & Fan-Out characteristics, choice of layers Transistor switches Realization of gates using NMOS, PMOS and CMOS technologies Scaling models, scaling factors for device parameters Gate Logic, Transmission gate Limits due to sub-threshold currents Current density limits on logic levels and supply voltages Design for Testability, Chip Input and Output circuits ent can understand the advanced design procedures with partition MOS Digital Integrated Circuits Analysis and Design-Sung-Mo	

Course Title: VLSI DESIGN (R1632043)

Section: B Date: 18-11-2019 Page No: 03 of 03

Revision No: 00 Prepared By: K.VENKATESWARA RAO Approved By: HOD

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
40.	Basic FPGA architecture, FPGA configuration		
41.	FPGA Technologies	from 10-02-20	
42.	FPGA families- Altera Flex 8000, Altera Flex10	to 25-02-20	
43.	Xilinx XC4000 series FPGA ,Spartan II	23-02-20	
44.	Xilinx Spartan XL FPGA, Vertex FPGA		
45.	Case Studies: FPGA Implementation Of Half Adder		Lecture interspersed with discussions
46.	Case Studies: FPGA Implementation Of Full Adder		
47.	Logic synthesis		
48.	RTL synthesis, High level Synthesis		

UNIT - VI Introduction to Low Power VLSI Design

CO6: Student can design the basic models of FPGA for the typical applications of basic circuits.

TB: T2: CMOS Digital Integrated Circuits Analysis and Design- Sung-Mo Kang, Yusuf Leblebici, Tata McGraw- Hill Education, 2003.

49.	Introduction to Deep submicron digital IC design	from	
50.	Over view of power consumption	29-02-20	
51.	Low –power design through voltage scaling	to 20-03-20	
52.	Estimation and optimization of switching activity		Lecture interspersed with discussions
53.	Reduction of switching capacitance		0.0000000000000000000000000000000000000
54.	Interconnect Design		
55.	Power Grid and Clock Design.		

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Signature of the HOD Date: 13/11/20

SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA

TENTATIVE LESSON PLAN: R1632044 DIGITAL SIGNAL PROCESSING

Course Title: D	IGITAL SIGNAL PROCESSING		
Section: Sec I	Date: 26/11/2019	Page No	
Revision No: 00		Approv	ed By: HOD
Tools: Black bo			
S.NO.	TOPIC	Date	Mode of Delivery
to verify the per techniques	RODUCTION the spectra of signals that are to be processed by formance of a variety of modern and classical spenal Processing by A.Anand Kumar,PHI		
1	Introduction to Digital Signal Processing		
2	Discrete time signals		
3	Discrete time sequences		Lecture interspersed with discussions
4	Linear shift invariant systems	From: 26/11/19	
5	Stability and causality	To: 17/12/19	
6,7,8	Linear constant coefficient difference equations		
9	Frequency domain representation of discrete time		
	signals		
10	Systems function		
11	Problems and tutorials		
	CRETE FOURIER SERIES & FOURIER TRANS		
	Define and use Discrete Fourier Transforms (DFT	s)	
12	gnal Processing by A.Anand Kumar,PHI Discrete Fourier Series & Fourier Transforms		
23	Properties of discrete Fourier series		
14	DFS representation of periodic sequences		
15	Discrete Fourier transforms		
16	Properties of DFT	From:	T
17	Linear convolution of sequences using DFT	18/12/19	Lecture interspersed
18	Computation of DFT	To:	with
19,20	Fast Fourier transforms (FFT)	31/12/19	discussions
21,22	Radix-2 decimation in time and decimation in		
	frequency FFT Algorithms		
23	Inverse FFT		
24,25	Problems on FFT		

rom: /1/20 Γο: //1/20	Lecture interspersed with discussions	
/1/20 Го:	interspersed with	
/1/20 Го:	interspersed with	
/1/20 Го:	with	
То:	Latter Street,	
	discussions	
	Lecture interspersed with discussions	
From:		
		To:
6/2/20		
From: 27/1/20 To: 16/2/20	7/1/20 To:	

57	problems		with discussions
CO6: Able t	NTRODUCTION TO DSP PROCESSORS o Program a DSP processor to filter signals		
	signal Processing by A.Anand Kumar,PHI		
58	Introduction to programmable DSPs		
59	Multiplier and Multiplier Accumulator (MAC)		
59	Modified Bus Structures and Memory Access		
	schemes in DSPs Multiple access memory		
60	Multiport memory		
60	VLSI architecture		
60	Pipelining		
60	Special addressing modes	F	
61	On-Chip Peripherals	From: 1/3/20 To: 18/3/20	Lecture interspersed with
62	Architecture of TMS 320C5XIntroduction		
63	Bus Structure		
63	Central Arithmetic Logic Unit		
64	Auxiliary Register		discussions
65	Index Register		
66	Block Move Address Register		
67	Parallel Logic Unit		
68	Memory mapped registers		
69	Program controller		
70	Some flags in the status registers		
71	On- chip registers		
72	On-chip peripherals		
73	Tutorials		

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TENTATIVE LESSON PLAN: R1632044 DIGITAL SIGNAL PROCESSING

Section : Sec	DIGITAL SIGNAL PROCESSING II Date: 26/11/2019	Page N	o:1 of 3	
Revision No:				
Tools: Black b	poard, PPTs	Approv	red By: HOD	
S.NO.	TOPIC	Date	Mode of Delivery	
CO1:: Estimate to verify the peter techniques	RODUCTION te the spectra of signals that are to be processed by erformance of a variety of modern and classical sp	a discrete tir ectrum estim	ne filter, and ation	
TB1: Digital sig	gnal Processing by A.Anand Kumar,PHI			
1	Introduction to Digital Signal Processing			
2	Discrete time signals		Lecture interspersed with discussions	
3	Discrete time sequences	_		
4	Linear shift invariant systems	From: 27/11/19 To: 18/12/19		
5	Stability and causality			
6,7,8	Linear constant coefficient difference equations			
9	Frequency domain representation of discrete time			
	signals			
10	Systems function			
11	Problems and tutorials			
UNIT -II DIS	CRETE FOURIER SERIES & FOURIER TRANS	SFORMS		
CO2:: Able to	Define and use Discrete Fourier Transforms (DFT	s)		
TB1: Digital si	gnal Processing by A.Anand Kumar,PHI	,		
12	Discrete Fourier Series & Fourier Transforms			
23	Properties of discrete Fourier series			
14	DFS representation of periodic sequences			
15	Discrete Fourier transforms			
16	Properties of DFT	From:		
17	Linear convolution of sequences using DFT	18/12/19	Lecture	
18	Computation of DFT	To:	interspersed	
19,20	Fast Fourier transforms (FFT)	30/12/19	with discussions	
21,22	Radix-2 decimation in time and decimation in frequency FFT Algorithms		discussions	
23	Inverse FFT			
24,25	Problems on FFT			

UNIT-III CO3: Able to TB1: Digital	Design Of IIR Digital Filters& Realizations o understand Design of IIR Digital filters and its appreciately appreciately and its appreciately apprec	olications.	
26	Design Of IIR Digital Filters& Realizations		
27	Analog filter approximations		
28	Butter worth filter approximations		
29	Chebyshev filter approximations	From:	Lecture
30	Design of IIR Digital filters from analog filters	2/1/20	interspersed with
31,32	Design Examples	To: 11/1/20	discussions
33,34	Analog and Digital frequency transformations	11/1/20	
,	Basic structures of IIR systems		
35,36	Basic structures of IIR systems		
UNIT – IV	Design Of FIR Digital Filters & Realizations		
TB1: Digital :	ounderstand the concepts FIR Digital Filter design signal Processing by A.Anand Kumar,PHI Design Of FIR Digital Filters & Realizations		
38	Characteristics of FIR Digital Filters	From: 26/1/20	Lecture interspersed with
39	Frequency response.		
40	Design of FIR Digital Filters using Window		
	Techniques		
41	Frequency Sampling technique,		
42	Frequency response	To:	
43	Design of FIR Digital Filters using Window	18/2/20	
	Techniques		discussions
44	Frequency Sampling technique		
45	Comparison of IIR & FIR filters		
46	Basic structures of FIR systems		
47	Lattice structures		
48	Lattice-ladder structures, tutorial		
CO5:: able to TB1: Digital	JLTIRATE SIGNAL PROCESSING understand the concepts of Decimation, Interpolation signal Processing by A.Anand Kumar,PHI	on	
49	Multirate Digital Signal Processing		
50	Decimation		Lecture
51	Interpolation		interspersed
52	Sampling rate conversion	From: 19/2/20	with
53	Implementation of sampling rate conversion	To:	discussions
54	Sub-band Coding of Speech Signals	28/2/20	
55	Implementation of Digital Filter Banks	-0,2,20	Lecture
56	Trans-multiplexers		interspersed

57	problems		with
			discussions
	NTRODUCTION TO DSP PROCESSORS		
	to Program a DSP processor to filter signals		
1B1: Digita 58	I signal Processing by A.Anand Kumar,PHI		
36	Introduction to programmable DSPs		
59	Multiplier and Multiplier Accumulator (MAC)		
59	Modified Bus Structures and Memory Access		
	schemes in DSPs Multiple access memory		
60	Multiport memory		
60	VLSI architecture		
60	Pipelining		
60	Special addressing modes	From: 1/3/20	
61	On-Chip Peripherals		
62	Architecture of TMS 320C5XIntroduction	To:	Lecture
63	Bus Structure	20/3/20	interspersed
63	Central Arithmetic Logic Unit		with
64	Auxiliary Register		discussions
65	Index Register		
66	Block Move Address Register		
67	Parallel Logic Unit		
68	Memory mapped registers		
69	Program controller		
70	Some flags in the status registers		
71	On- chip registers		
72	On-chip peripherals		
73	Tutorials		

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TENTATIVE LESSON PLAN: R163204A

Course T	itle:OOPS Through JAVA		
Section:	Date:18-11-19	Page No: 1 of 3	
Revision No:	Prepared by : CH SIVA RAJESH	Approved by :H	IOD
	lack board, PPTs		_
No.of periods	Topics	Date	Mode of Delivery
UNIT-I	Basics of Object Oriented Programming (OO)	P)	
	derstand the basics of Programming	•	
	gramming in JAVA, Sachin Malhotra, Saurabh	Choudary, Oxford	
1	Introduction to OOP	18-11-19	
2	procedural programming language	19-11-19	
3	object oriented language	20-11-19	1
4	principles of OOP	21-11-19	
5	applications of OOP	22-11-19	
6	history of java	23-11-19	
7	java features	27-11-19	
8	JVM	29-11-19	
9	program structure	30-11-19	Lecture
10	Variables	12-03-2019	interspersed
11	primitive data types	12-04-2019	with discussion
12	identifiers	12-05-2019	
13	literals	12-06-2019	
14	operators	12-07-2019	
15	expressions	12-10-2019	
16	precedence rules and associativity	12-10-2019	
17	primitive type conversion and casting	12-11-2019	
18	flow of control	12-12-2019	
UNIT-II	JAVA Basics		
CO1 : U1	iderstand the basics of Programming		
TB:: Pro	gramming in JAVA, Sachin Malhotra, Saurabh	Choudary, Oxford	
19	Classes and objects	13/12/2019	
20	class declaration	13/12/2019	
21	creating objects	19/12/2019	
22	methods	19/12/2019	
23	constructors and constructor overloading	20/12/2019	Lecture
24	garbage collector	20/12/2019	interspersed
25	importance of static keyword and examples	21/12/2019	with discussion
26	this keyword	21/12/2019	
27	arrays	23/12/2019	
28	command line arguments	23/12/2019	
29	nested classes	26/12/2019	

30	Inheritance	27/12/2019	
31	types of inheritance	30/12/2019	-
32	super keyword	31/12/2019	
33	final keyword	01-02-2020	
34	overriding and abstract class	01-03-2020	-
35	Interfaces	01-04-2020	
36	creating the packages	01-04-2020	Lecture
37	using packages	01-06-2020	interspersed
38	importance of CLASSPATH	01-06-2020	with discussions
39	java.lang package	01-07-2020	
40	Exception handling	01-07-2020	
41	importance of try, catch	01-09-2020	
42	throw, throws and finally block	01-09-2020	
43	user-defined exceptions	01-10-2020	
44	Assertions.	28/1/2020	
46	creation of threads thread priorities	30/1/2020 02-05-2020	Lecture
46	Icreation of threads	20/1/2020	
47	thread priorities	02-05-2020	Lecture
47 48	thread priorities thread synchronization	02-05-2020 02-08-2020	interspersed
47 48 49	thread priorities thread synchronization communication between threads	02-05-2020 02-08-2020 02-12-2020	interspersed
47 48	thread priorities thread synchronization	02-05-2020 02-08-2020	
47 48 49 50 51 UNIT-V CO1: U	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020	interspersed
47 48 49 50 51 UNIT-V CO1: U	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020	interspersed
47 48 49 50 51 UNIT-V CO1: U TB:: Pr	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford 16/2/2020 20/2/2020	interspersed
47 48 49 50 51 JNIT-V CO1: U CB:: Pr 52 53 54	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure Applet life cycle	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford	interspersed
47 48 49 50 51 JNIT-V CO1: U FB:: Pr 52 53 54 55	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure Applet life cycle sample Applet programs	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford 16/2/2020 20/2/2020 25/2/2020 26/2/2020	interspersed
47 48 49 50 51 JNIT-V CO1: U FB:: Pr 52 53 54 55 56	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure Applet life cycle sample Applet programs event delegation model	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford 16/2/2020 20/2/2020 25/2/2020	interspersed with discussions Lecture interspersed
47 48 49 50 51 JNIT-V CO1: U TB:: Pr 52 53 54 55 56 57	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure Applet life cycle sample Applet programs event delegation model sources of event	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford 16/2/2020 20/2/2020 25/2/2020 26/2/2020	interspersed with discussions Lecture
47 48 49 50 51 UNIT-V CO1: UTB:: Pr 52 53 54 55 56 57 58	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure Applet life cycle sample Applet programs event delegation model sources of event Event Listeners	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford 16/2/2020 20/2/2020 25/2/2020 26/2/2020 26/2/2020	interspersed with discussions Lecture interspersed
47 48 49 50 51 UNIT-V CO1: U FB:: Pr 52 53 54 55 56 57 58 59	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure Applet life cycle sample Applet programs event delegation model sources of event Event Listeners adapter classes	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford 16/2/2020 20/2/2020 25/2/2020 26/2/2020 26/2/2020 27/2/2020 29/2/2020 03-03-2020	interspersed with discussions Lecture interspersed
47 48 49 50 51 UNIT-V CO1: U TB:: Pr 52 53 54 55 56 57 58	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure Applet life cycle sample Applet programs event delegation model sources of event Event Listeners	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford 16/2/2020 20/2/2020 26/2/2020 26/2/2020 27/2/2020 29/2/2020	interspersed with discussions Lecture interspersed
47 48 49 50 51 UNIT-V CO1 : U FB:: Pr 52 53 54 55 56 57 58 59 60 UNIT-V Under	thread priorities thread synchronization communication between threads Reading data from files and writing data to files random access file Applets and Event Handling Inderstand the applet programming and event hand ogramming in JAVA, Sachin Malhotra, Saurabh Ch Applet class Applet structure Applet life cycle sample Applet programs event delegation model sources of event Event Listeners adapter classes inner classes	02-05-2020 02-08-2020 02-12-2020 14/2/2020 15/2/2020 ling noudary, Oxford 16/2/2020 20/2/2020 25/2/2020 26/2/2020 26/2/2020 27/2/2020 29/2/2020 03-03-2020 03-04-2020	interspersed with discussions Lecture interspersed

62	Button	03-05-2020	
63	Label	03-07-2020	
64	Checkbox	03-10-2020	1
65	Radio Buttons	03-11-2020	Lecture
66	List Boxes	03-12-2020	interspersed
67	Choice Boxes	15/3/2020	with discussions
68	Container class	18/3/2020	
69	Layouts	19/3/2020	
70	Menu and Scrollbar	19/3/2020	

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BIO-MEDICAL ENGINEERING (R163204D)

Course Title: BIO-M		
Section : Sec I&II	Date: 18/11/2019	Page No: 01 of 04
Revision No: 00	Prepared By: N.MAYURI	Approved By: HOD

No. of Periods	TOPIC	Date	Mode of Delivery
CO1: Understa parameters fro TB: "Fundame	RODUCTION TO BIOMEDICAL INSTRUMENT and the origin of bio-potential and how to mea m Human body ntals of Bio-Medical Instrumentation, Onkar N.	sure various	
Books.	Age of Biomedical Engineering, Development of	18/11/2019	T
• • • • • • • • • • • • • • • • • • • •	Biomedical Instrumentation	10/11/2019	
2	Man Instrumentation System	19/11/2019	
3	Components of the Man-Instrument System	20/11/2019	
4	Problems Encountered in Measuring a Living	21/11/2019	
	System, Physiological System of the Body		
5	TUTORIAL	22/11/2019	
6	Sources of Bioelectric Potentials	22/11/2019	Lecture
7	Muscle, Bioelectric Potentials	23/11/2019	intersperse
. 8	Resting and Action Potentials and Propagation	27/11/2019	with
9	Bioelectric Potentials-ECG, EEG and EMG,	29/11/2019	discussions
10	Envoked Responses	30/11/2019	
11	TUTORIAL	3/12/2019	
UNIT-II	ELECTRODES AND TRANSDUCERS		
different bio-po	and the principles involved in Electrodes and Trotentials ntals of Bio-Medical Instrumentation", Onkar N.		
12	Introduction, Electrode Theory, Bio-potential Electrodes	5/12/2019	Lecture
13	Basic Transducer Principles,	6/12/2019	interspersed
14	Bio-chemical Transducers		with
15	Micro Electrodes, Examples of Electrodes	7/12/2019 9/12/2019	discussions
16	The Transducer and Transduction Principles,	10/12/2019	
17	Active Transducers, Passive Transducers	11/12/2019	

No. of Periods	TOPIC	de la companya di sala di companya kappana di S	Mode of Delivery
19	Transducers for Biomedical Applications	13/12/2019	Contact (March March Mar
20	Pulse Sensors, Respiration Sensor	19/12/2019	
21	Transducers with Digital Output	20/12/2019	
22	TUTORIAL	21/12/2019	

UNIT-III CARDIOVASCULAR SYSTEM AND MEASUREMENTS AND MEASUREMENTS and MEASUREMENTS IN THE RESPIRATORY SYSTEM

CO3: Learn about the positioning and functioning of the cardiovascular system, measurement of parameters related to cardiology and Understand the basic knowledge about measurements of parameters related to Respiratory system

TB: "Fundamentals of Bio-Medical Instrumentation", Onkar N. Pandey, 4th edition, katson Books.

23	The Heart and Cardiovascular System, Electro	23/12/2019	71
	Cardiography		
24	ECG Amplifiers, Electrodes, ECG Recorder	24/12/2019	
	principles		
25	Types of ECG Recorders, single channel	27/12/2019	
	Recorder, Three channel Recorder		
26	ECG for clinical applications, Blood Pressure	30/12/2019	Lecture
	Measurement		interspersed
27	Measurement of Blood Flow & Cardiac Output	31/12/2019	with
28	Measurement of Heart Sound, Plethysmography	2,3/1/2020	discussions
29	The Physiology of The Respiratory System	4/1/2020	
30	Tests and Instrumentation for The Mechanics of	6,7/1/20	
	Breathing		
31	Measurement of Residual volume, Respiratory	8,9/1/20	
	Therapy Equipment		
32	TUTORIAL	10/1/20	

UNIT-IV PATIENT CARE AND MONITORING and THERAPEUTIC AND PROSTHETIC DEVICES

CO5: Gain knowledge about fundamental issues and elements of patient care in ICU and Organization of hospitals with quality care and Ability to understand diagnosis and therapy related equipments

TB: "Fundamentals of Bio-Medical Instrumentation", Onkar N. Pandey, 4th edition, katson Books.

33	Elements of Intensive-Care Monitoring	28/1/2020	
34	Patient Monitoring Displays	29/1/2020	
35	Diagnosis, Calibration and Repair ability	30/1/2020	
36	Other Instrumentation for Monitoring Patients	31/1/2020	
37	Other Instrumentation for Monitoring Patients	1/2/2020	

No. of Periods	TOPIC	Date	Mode of Delivery
38	Organization of the Hospital for Patient-Care Monitoring, Pacemakers, Defibrillators	4/2/2020	
39	Therapeutic and Prosthetic Devices Introduction, Audiometers and Hearing Aids	5/2/2020	
40	Myoelectric Arm, Laparoscope, Ophthalmology Instruments	6/2/2020	Lecture interspersed
41	Anatomy of Vision, Electrophysiological Tests	7/2/2020	with
42	Ophthalmoscope, Tonometer for Eye Pressure Measurement	8/2/2020	discussions
43	Diathermy, Clinical Laboratory Instruments	11/2/2020	
44	Biomaterials, Stimulators	12/2/2020	

UNIT-V DIAGNOSTIC TECHNIQUES AND BIO-TELEMETRY

CO7: Learn Ultrasound imaging techniques and its usefulness in diagnosis and different types of radio diagnostic techniques

TB: "Fundamentals of Bio-Medical Instrumentation", Onkar N. Pandey, 4th edition, katson Books.

45	Principles of Ultrasonic Measurement	12/2/2020	
	1 imorpies of Ottrasome Weastrement		
46		13/2/2020	
47	Ultrasonic Imaging, Ultrasonic Applications of	14/2/2020	
	Therapeutic Uses		
48	Ultrasonic Diagnosis	15/2/2020	
49	X-Ray and Radio-Isotope Instrumentations	18/2/2020	
50	CAT Scan	25/2/2020	
51	Emission Computerized Tomography	26/2/2020	
52	MRI	26/2/2020	Lecture
54	Introduction to Biotelemetry	27/2/2020	interspersed
55	Physiological Parameters Adaptable to	20/2/2020	with
	Biotelemetry	29/2/2020	discussions
55	The Components of Biotelemetry System	29/2/2020	
56	Implantable Units	3/3/2020	
57	Telemetry for ECG Measurements during,	1/2/2020	
	Telemetry for Emergency Patient Monitoring	4/3/2020	

UNIT-VI MONITORS, RECORDERS AND SHOCK HAZARDS

CO8: Understand the importance of patient safety against electrical hazard and functioning of Amplifiers, display devices and signal recorders

TB: "Fundamentals of Bio-Medical Instrumentation", Onkar N. Pandey, 4th edition, katson Books.

No. of Periods	TOPIC	Date	Mode of Delivery
58	Bio potential Amplifiers ,Monitors	5/3/2020	
59	Recorders, Strip chart, Galvanometric Recorder	6/3/2020	
60	Potentiometric Recorder, UV Recorder	7/3/2020	Lecture
61	Electrostatic Recorder, Colour printer	10/3/2020	interspersed
62	Physiological Effects and Electrical Current,	11/3/2020	with
63	Shock Hazards from Electrical Equipment	12/3/2020	discussions
64	Methods of Accident Prevention	13/3/2020	
65	Isolated Power Distribution System	17/3/2020	
66	TUTORIAL	18/3/2020	
67	TUTORIAL	19/3/2020	

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	bile Cellular Telecommunications-W.C.Y. Lee, Tata M Introduction of cellular mobile systems	10 11 14	Edition, 2006.
2.	Spectrum efficiency considerations	18-11-19	
3.	Why 800 MHz and history of 800MHz	19-11-19	
4.	Trunking Efficiency and Basic cellular systems	20-11-19	
5.	Performance Criteria	21-11-19	
6.	Uniqueness of Mobile radio environment	22-11-19	Lecture
7.	Delay Spread, Coherence Bandwidth, direct wave path, line of sight path	25-11-19 26-11-19	- Intersperse
8.	Noise level in cellular system		
9.	Hexagonal shaped cells	27-11-19	
10.	Operation of cellular systems	28-11-19	
11.	Analog and Digital cellular systems	28-11-19	
12.	Tutorial Tutorial	28-11-19	
FLEM		29-11-19	
nageme : Mobile	ENTS OF CELLULAR RADIO SYSTEMS DESIGN acquainted with the role of cellular and mobile ent issues e Cellular Telecommunications-W.C.Y. Lee, Tata Mccass Communications-Theodore. S. Rappaport, Pearso		ons in frequence
nageme : Mobile : Wirele 13.	e Cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem		ons in frequence
nageme : Mobile : Wirele 13.	e Cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels	Graw Hill 2 nd H	Edition, 2006.
nageme : Mobile : Wirele 13. 14.	e Cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor	Graw Hill 2 nd Hone ducation 4-12-19 4-12-19	Edition, 2006. Lecture
nageme : Mobile : Wirele 13. 14. 15.	cent issues e Cellular Telecommunications-W.C.Y. Lee, Tata Mcentess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems	Graw Hill 2 nd Hone description 4-12-19	Edition, 2006.
nageme : Mobile : Wirele 13. 14. 15. 16.	e Cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting	Graw Hill 2 nd For education 4-12-19 4-12-19 5-12-19	Lecture interspersed
nageme: Mobile: Wirele 13. 14. 15. 16. 17. 18.	cellular Telecommunications-W.C.Y. Lee, Tata Mccess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting Consideration of the components of cellular systems	Graw Hill 2 nd For education 4-12-19 4-12-19 5-12-19 5-12-19	Lecture interspersed
13. 14. 15. 16. 17. 18. 19.	cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting Consideration of the components of cellular systems Tutorial	Graw Hill 2 nd Honeducation 4-12-19 4-12-19 5-12-19 5-12-19 6-12-19 9-12-19	Lecture interspersed
13. 14. 15. 16. 17. 18. 19. F-II II	cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting Consideration of the components of cellular systems Tutorial	Graw Hill 2 nd For education 4-12-19 4-12-19 5-12-19 5-12-19 9-12-19 20-12-19	Lecture interspersed with discussion
nageme : Mobile : Wirele 13. 14. 15. 16. 17. 18. 19. Γ-II II :: Be a nunicati	ce Cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting Consideration of the components of cellular systems Tutorial NTERFERENCE acquainted with different interference factors inflicions.	Graw Hill 2 nd For education 4-12-19 4-12-19 5-12-19 5-12-19 9-12-19 20-12-19 uencing cellul	Lecture interspersed with discussion
nageme : Mobile : Wirele 13. 14. 15. 16. 17. 18. 19. Γ-II II :: Be a nunicati	cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting Consideration of the components of cellular systems Tutorial NTERFERENCE Inequainted with different interference factors inflicions. Cellular Telecommunications-W.C.Y. Lee Technology.	Graw Hill 2 nd For education 4-12-19 4-12-19 5-12-19 5-12-19 9-12-19 20-12-19 uencing cellul	Lecture interspersed with discussion
nageme : Mobile : Wirele 13. 14. 15. 16. 17. 18. 19. Γ-II II :: Be a nunicati	cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting Consideration of the components of cellular systems Tutorial NTERFERENCE Inequainted with different interference factors inflicions. Cellular Telecommunications-W.C.Y. Lee Technology.	Graw Hill 2 nd For education 4-12-19 4-12-19 5-12-19 5-12-19 9-12-19 20-12-19 uencing cellul	Lecture interspersed with discussion
nageme : Mobile : Wirele 13. 14. 15. 16. 17. 18. 19. Γ-II II :: Be a nunicati	cellular Telecommunications-W.C.Y. Lee, Tata Mccess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting Consideration of the components of cellular systems Tutorial NTERFERENCE Icquainted with different interference factors inflicions. Cellular Telecommunications-W.C.Y. Lee, Tata McGi	Graw Hill 2 nd For education 4-12-19 4-12-19 5-12-19 5-12-19 9-12-19 20-12-19 uencing cellul	Lecture interspersed with discussion
nageme : Mobile : Wirele 13. 14. 15. 16. 17. 18. 19. ☐ — II II :: Be a municati Mobile (20.	cellular Telecommunications-W.C.Y. Lee, Tata Mcess Communications-Theodore. S. Rappaport, Pearso General description of the problem Concept of frequency reuse channels Co-channel interference reduction factor Desired C/I from a normal case in an Omnidirectional antenna systems Handoff mechanism and cell splitting Consideration of the components of cellular systems Tutorial NTERFERENCE Inequainted with different interference factors inflicions. Cellular Telecommunications-W.C.Y. Lee Technology.	Graw Hill 2 nd For education 4-12-19 4-12-19 5-12-19 5-12-19 9-12-19 20-12-19 uencing cellul raw Hill 2nd Education	Lecture interspersed with discussion

31.	Near-end-Far-end interference		
32.	Interference between systems, UHF and long distance interference	24-12-19	
33.	Tutorial	24-12-19	

FREQUENCY MANAGEMENT AND CHANNEL ASSIGNMENT UNIT -III

CO3:: Be acquainted with the role of cellular and mobile communications in frequency management issues

TB:: Mobile Cellular Telecommunications-W.C.Y. Lee, Tata McGraw Hill 2nd Edition, 2006.

TB:: Wireless Communications-Theodore. S. Rappaport, Pearson education

No. of Periods	TOPIC	DATE	Mode of Delivery
34.	Frequency management: Numbering and grouping	26-12-19	Zenvery
35.	Setup, access channels	26-12-19	
36.	Paging channels	27-12-19	
37.	Channel assignment to the cell site	2-1-2020	Lecture
38.	Fixed channel assignment, adjacent, channel sharing and borrowing	2-1-2020	interspersed with discussions
39.	Adjacent, channel sharing and borrowing	2-1-2020	
40.	Sectorization and overlaid cells	6-1-2020	

UNIT - III CELL COVERAGE FOR SIGNAL AND TRAFFIC

CO2:: Be able to efficiently use the background behind developing different path loss and/or radio coverage in cellular environment

TB: Mobile Cellular Telecommunications-WCV I

No. 01 Periods		DATE	Mode of Delivery
41.	General introduction and problems	6-1-2020	J
42.	Mobile point –to-point model (LEE model)	6-1-2020	
43.	Phase difference between a direct path and reflected path	7-1-2020	Lecture
44.	Constant standard deviation along apath loss slope and general formula for mobile radio propagation	27-1-2020	interspersed with discussions
45.	Propagation over water or flat open area	28-1-2020	

48.	Long distance propagation and form of a point –to-point model	3-2-2020	
49.	Tutorial	3-2-2020	
UNIT – IV CO3:: Gain t TB: Mobile C	CELLSITE AND MOBILE ANTENNAS he understanding of cellsite antennas and mobile ar ellular Telecommunications-W.C.Y. Lee, Tata McC	ntennas	dition, 2006.
50.	Sum and difference patterns and their synthesis	4-2-2020	
51.	Omni directional antennas at cellsite	5-2-2020	_
52.	Directional antennas for interference reduction	11-2-2020	Lecture interspersed
53.	Space diversity antennas	13-2-2020	with discussions
54.	Umbrella pattern antennas	13-2-2020	
55.	Unique situation at cellsite antennas	18-2-2020	-
56.	Mobile roof mounted and glass mounted antennas and high gain antennas	24-2-2020	
57.	Horizontally and vertically oriented space diversity antennas	24-2-2020	
58.	Tutorial	26-2-2020	
No. of Periods	Communications-Theodore. S. Rappaport, Pearson TOPIC		Mode of
ID WITCHESS			
No. of Periods	TOPIC	DATE	Mode of
No. of Periods	TOPIC		Mode of Delivery
No. of Periods 59.	TOPIC Why handoffs, types of Handoffs and handoff initiation	DATE	
No. of Periods	TOPIC Why handoffs, types of Handoffs and handoff		
59.	Why handoffs, types of Handoffs and handoff initiation	2-3-2020	
59. 60.	Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff	DATE	
59. 60. 61.	TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO)	2-3-2020	Delivery
59. 60. 61. 62.	TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff	2-3-2020 2-3-2020 3-3-2020	Delivery
59. 60. 61. 62. 63.	Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting	2-3-2020 2-3-2020 3-3-2020 4-3-2020	Lecture interspersed
59. 60. 61. 62. 63. 64.	TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells	2-3-2020 2-3-2020 3-3-2020 4-3-2020 5-3-2020	Lecture interspersed
59. 60. 61. 62. 63. 64.	TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods	2-3-2020 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020	Lecture interspersed
60. 61. 62. 63. 64. 65.	Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate	2-3-2020 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020 9-3-2020	Lecture interspersed
59. 60. 61. 62. 63. 64. 65. 66.	Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate Formula of dropped call rate	2-3-2020 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020	Lecture interspersed
59. 60. 61. 62. 63. 64. 65. 66. 67.	Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate Formula of dropped call rate Problems	2-3-2020 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020 9-3-2020	Lecture interspersed
59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. UNIT - VI DICCO6: Gain the	TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate Formula of dropped call rate Problems Finding the values of Ω and μ Tutorial GITAL CELLULAR NETWORKS knowledge of digital cellular networks in different	2-3-2020 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020 9-3-2020 10-3-2020 10-3-2020 generations.	Lecture interspersed with discussions
59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. UNIT - VI DICO6: Gain the	Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate Formula of dropped call rate Problems Finding the values of Ω and μ Tutorial GITAL CELLULAR NETWORKS knowledge of digital cellular networks in different cellular Telecommunications-W.C.Y. Lee, Tata McG	2-3-2020 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020 9-3-2020 10-3-2020 10-3-2020 generations.	Lecture interspersed with discussions
59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. UNIT - VI DICCO6: Gain the	TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate Formula of dropped call rate Problems Finding the values of Ω and μ Tutorial GITAL CELLULAR NETWORKS knowledge of digital cellular networks in different	2-3-2020 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020 9-3-2020 10-3-2020 10-3-2020 generations.	Lecture interspersed with discussions

	e: CELLULAR AND MOBILE COMMUNICATIONS		1 000
Section : S Revision No	TO SERVICE AND A	Page No:	
Tools: Black b		Approved	By : HOD
No. of Periods	TOPIC	Date	Mode of Delivery
environment TB: Mobile	Cellular Telecommunications-W.C.Y. Lee, Tata McG	Fraw Hill 2 nd 1	
1.	Introduction of cellular mobile systems	18-11-19	
2.	Spectrum efficiency considerations	19-11-19	
3.	Why 800 MHz and history of 800MHz	20-11-19	
4.	Trunking Efficiency and Basic cellular systems	21-11-19	
5.	Performance Criteria	22-11-19	Lecture
6.	Uniqueness of Mobile radio environment	22-11-19	interspersed
7.	Delay Spread, Coherence Bandwidth, direct wave path, line of sight path	25-11-19	with discussions
8.	Noise level in cellular system	26-11-19	
9.	Hexagonal shaped cells	27-11-19	
10.	Operation of cellular systems	28-11-19	
11.	Analog and Digital cellular systems	28-11-19	
12.	Tutorial	29-11-19	
managemen ГВ: Mobile	acquainted with the role of cellular and mobile of tissues Cellular Telecommunications-W.C.Y. Lee, Tata McG as Communications-Theodore. S. Rappaport, Pearson General description of the problem	raw Hill 2 nd F	
14.	Concept of frequency reuse channels		
15.		5-12-19	Lecture
	Co-channel interference reduction factor	5-12-19	interspersed with discussions
16.	Desired C/I from a normal case in an Omnidirectional antenna systems	6-12-19	
17.	Handoff mechanism and cell splitting	6-12-19	
18.	Consideration of the components of cellular systems	9-12-19	
19.	Tutorial	9-12-19	
CO2:: Be a	NTERFERENCE acquainted with different interference factors inflions. Cellular Telecommunications-W.C.Y. Lee, Tata McG Introduction of Cochannel Interference	raw Hill 2nd 1	
21.	Real time cochannel interference measurement at	9-12-19	
	mobile radio transceivers	10-12-19	
	moone radio transcervers		

22.	Design of Omnidirectional antenna in a worst case	11-12-19	
23.	Design of a directional antenna system	11-12-19	
24.	Lowering the antenna height	13-12-19	
25.	Notch in a tilted antenna pattern	16-12-19	
26.	Umbrella pattern effect	16-12-19	Lecture
27.	Use of parasitic elements		interspersed
28.	Diversity receiver	17-12-19	with discussions
29.	Types of non-Cochannel interference	19-12-19	
30.	Adjacent channel interference		
31.	Near-end-Far-end interference		
32.	Interference between systems, UHF and long distance interference	23-12-19	
33.	Tutorial	24-12-19	

UNIT -III FREQUENCY MANAGEMENT AND CHANNEL ASSIGNMENT

CO3:: Be acquainted with the role of cellular and mobile communications in frequency management issues

TB:: Mobile Cellular Telecommunications-W.C.Y. Lee, Tata McGraw Hill 2nd Edition, 2006.

TB:: Wireless Communications-Theodore. S. Rappaport, Pearson education

No. of Periods	TOPIC	DATE	Mode of Delivery
34.	Frequency management: Numbering and grouping	26-12-19	Lecture interspersed with discussions
35.	Setup, access channels	27-12-19	
36.	Paging channels	27-12-19	
37.	Channel assignment to the cell site	2-1-2020	
38.	Fixed channel assignment, adjacent, channel sharing and borrowing	2-1-2020	
39.	Adjacent, channel sharing and borrowing	6-1-2020	
40.	Sectorization and overlaid cells	6-1-2020	

UNIT - III CELL COVERAGE FOR SIGNAL AND TRAFFIC

CO2:: Be able to efficiently use the background behind developing different path loss and/or radio coverage in cellular environment

TB: Mobile Cellular Telecommunications-W.C.Y. Lee, Tata McGraw Hill 2nd Edition, 2006.

No. of Periods		DATE	Mode of Delivery
41.	General introduction and problems	7-1-2020	
42.	Mobile point -to-point model (LEE model)	7-1-2020	Lecture interspersed with discussions
43.	Phase difference between a direct path and reflected path	7-1-2020	
44.	Constant standard deviation along apath loss slope and general formula for mobile radio propagation	27-1-2020	
45.	Propagation over water or flat open area	28-1-2020	

46.	Land to mobile transmission over water and problems	28-1-2020	
47.	Foliage loss and propagation in Near –in distance	29-1-2020	
48.	Long distance propagation and form of a point –to-point model	3-2-2020	
49.	Tutorial	4-2-2020	
O3:: Gain th	CELLSITE AND MOBILE ANTENNAS ne understanding of cellsite antennas and mobile antellular Telecommunications-W.C.Y. Lee, Tata McG		dition, 2006.
50.	Sum and difference patterns and their synthesis	4-2-2020	
51.	Omni directional antennas at cellsite	5-2-2020	Lecture
52.	Directional antennas for interference reduction	11-2-2020	interspersed
53.	Space diversity antennas	11-2-2020	with discussion
54.	Umbrella pattern antennas	13-2-2020	
55.	Unique situation at cellsite antennas	18-2-2020	
56.	Mobile roof mounted and glass mounted antennas and high gain antennas	24-2-2020	
57.	Horizontally and vertically oriented space diversity antennas	26-2-2020	
	antennas	20-2-2020	
O5 :: Obtain B:: Mobile C	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and lellular Telecommunications-W.C.Y. Lee, Tata McG	26-2-2020 how dropped fraw Hill 2 nd F	calls exist
NIT – V HAO5 :: Obtain B:: Mobile C B:: Wireless	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and	26-2-2020 how dropped fraw Hill 2 nd F	Mode of
NIT – V HA O5 :: Obtain B:: Mobile C B:: Wireless	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and ellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson	26-2-2020 how dropped fraw Hill 2 nd Experiment Exper	Edition, 2006.
NIT – V HA O5 :: Obtain B:: Mobile C B:: Wireless o. of Periods	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and sellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff	26-2-2020 how dropped or aw Hill 2 nd Education	Mode of
NIT – V HAO5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and lellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation	how dropped fraw Hill 2 nd Education DATE 2-3-2020	Mode of
NIT – V HAO5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and sellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff	26-2-2020 how dropped fraw Hill 2 nd Experiment Exper	Mode of Delivery
NIT – V HAO5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and sellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO)	how dropped fraw Hill 2 nd Education DATE 2-3-2020	Mode of Delivery Lecture
NIT – V HAO5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60. 61. 62.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and sellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff	26-2-2020 how dropped fraw Hill 2 nd E education DATE 2-3-2020 3-3-2020	Mode of Delivery Lecture interspersed
NIT – V HAO5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60. 61. 62. 63.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and sellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting	26-2-2020 how dropped of a Hill 2 nd E education DATE 2-3-2020 3-3-2020 4-3-2020	Mode of Delivery Lecture interspersed
NIT – V HA O5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60. 61. 62. 63. 64.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and sellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells	26-2-2020 how dropped of a Hill 2 nd E education DATE 2-3-2020 3-3-2020 4-3-2020 5-3-2020	Mode of Delivery Lecture interspersed
NIT – V HA O5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60. 61. 62. 63. 64. 65.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and sellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods	26-2-2020 how dropped of a Hill 2 nd E education DATE 2-3-2020 3-3-2020 4-3-2020	Mode of Delivery Lecture interspersed
NIT – V HA O5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60. 61. 62. 63. 64. 65. 66.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and sellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate	26-2-2020 how dropped fraw Hill 2 nd E education DATE 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020 9-3-2020	Mode of Delivery Lecture interspersed
NIT – V HA O5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60. 61. 62. 63. 64. 65. 66.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and ellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate Formula of dropped call rate	26-2-2020 how dropped of a Hill 2 nd E education DATE 2-3-2020 3-3-2020 4-3-2020 5-3-2020 9-3-2020 9-3-2020	Mode of Delivery Lecture
NIT – V HA O5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70.	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and rellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate Formula of dropped call rate Problems Finding the values of Ω and μ Tutorial	26-2-2020 how dropped fraw Hill 2 nd E education DATE 2-3-2020 3-3-2020 4-3-2020 5-3-2020 5-3-2020 9-3-2020	Mode of Delivery Lecture interspersed
NIT - V HA O5 :: Obtain B:: Mobile C B:: Wireless o. of Periods 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. NIT - VI DI O6 : Gain the	Tutorial ANDOFF AND DROPPED CALLS the knowledge of different handoff techniques and dellular Telecommunications-W.C.Y. Lee, Tata McGCommunications-Theodore. S. Rappaport, Pearson TOPIC Why handoffs, types of Handoffs and handoff initiation Delaying handoff and forced handoff Mobile assisted handoff(MAHO) Cellsite handoffs and Intersystem handoff Cell splitting Microcells Vehicle- locating methods Introduction to dropped call rate Formula of dropped call rate Problems Finding the values of Ω and μ	26-2-2020 how dropped of a Hill 2 nd E education DATE 2-3-2020 3-3-2020 4-3-2020 5-3-2020 9-3-2020 9-3-2020 10-3-2020 generations.	Lecture interspersed with discussion

12-3-2020

GSM Channels and Channel modes

72.

73.	Multiple access scheme	12-3-2020	Lecture interspersed with discussions
74.	TDMA	16-3-2020	
75.	TDMA channel bursts and training sequence	17-3-2020	
76.	CDMA	17-3-2020	
77.	OFDMA	18-3-2020	
78.	Architecture of 3G cellular systems.	18-3-2020	
79.	Tutorial	18-3-2020	

Shal.
Signature of the Faculty

Signature of the HOD

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ENIKEPADU, VIJAYAWADA-521 108

TENTATIVE LESSON PLAN: R1642042

Section : Se	: ELECTRONIC MEASUREMENTS AND INSTRUME cc A Date: 18-11-2019	Page No: 01	of 03
	: 00 Prepared By: P. RAVEENDRA	Approved By	
Tools: Black be	pard, PPTs		
No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I			
co1:: Sele	ct the instrument to be used based on the re	quirements.	
	nic instrumentation, second edition - H.S.Kalsi,		
1.	Performance characteristics of instruments	ata Mediaw	11111, 200 1.
2.	Static characteristics Accuracy, Resolution, Precision		
3.	Expected value, Error, Sensitivity Errors in		
٥.	Measurement		
4.	Expected value, Error, Sensitivity Errors in	FROM:	
	Measurement	18-11-19	
5.	Dynamic Characteristics-speed of response		Lecture
6.	Fidelity, Lag and Dynamic error.		interspersed with discussions
7.	Dynamic Characteristics-speed of response		With discussions
8.	Fidelity, Lag and Dynamic error.		
9.	DC Voltmeters- Multi-range		
10.	DC Voltmeters- Multi-range		
11.	Range extension/Solid state and differential voltmeters	TO:	
12.	Tutorial	09-12-19	
13.	AC voltmeters- multi range, range extension	09-12-19	
14.	Shunt Thermo couple type RF ammeter		Lecture
15.	Ohmmeters series type, shunt type		interspersed
16.	Multimeter for Voltage, Current and resistance elements		with discussions
17.	Tutorial		
UNIT - II			
	derstand and analyze different signal genera	itors and an	alyzers
TB: Electr	onic instrumentation, second edition - H.S.Kalsi,	Tata McGraw	Hill, 2004.
18.	Signal Generator- fixed and variable		
19.	AF oscillators, AF sine wave signal generators		
20.	AF square wave signal generators		
21.	Function Generators Square pulse, Random noise	FROM:	
22.	Sweep generator	10-12-19	
23.	Arbitrary waveform generator		
24.	Wave Analyzers		Lecture
25.	Harmonic Distortion Analyzers		interspersed
26.	Spectrum Analyzers		with discussion
20.		TO:	THE GISCUSSION
27	Digital Fourier Analyzana		
27. 28.	Digital Fourier Analyzers Tutorial	17-12-19	

UNIT - III

co3:: Understand the design of oscilloscopes for different applications

TB: Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.

29.	Oscilloscopes CRT features, vertical amplifiers	15	
30.	horizontal deflection system		Lecture interspersed with discussions
31.	sweep, trigger pulse, delay line		
32.	sync selector circuits, simple CRO		
33.	Triggered sweep CRO	FROM:	
34.	Dual beam CRO ,Dual trace oscilloscope	18-12-19	
35.	Sampling oscilloscope,		
36.	storage oscilloscope	TO:	
37.	digital readout oscilloscope, DSO	07-01-20	
38.	Lissajous method of frequency measurement	7 0, 01 20	
39.	Standard specifications of CRO		
40.	probes for CRO- Active & Passive, attenuator type		
41.	Tutorial		

UNIT -IV

co4:: Use AC and DC bridges for relevant parameter measurement

TB:: Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.

42.	AC Bridges Measurement of inductance- Maxwell's bridge.		Lecture interspersed with discussions
43.	Anderson bridge.		
44.	Measurement of capacitance -Shearing Bridge	FROM:	
45.	Wheat stone bridge	28-01-20	
46.	Wien's Bridge	TO:	
47.	Errors and precautions in using bridges	18-02-20	
48.	Q-meter.		
49.	Tutorial		

UNIT - V

CO5:: Design different transducers for measurement of different parameters

TB:: Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.

No. of Periods	TOPIC	DATE	Mode of Delivery
50.	Transducers		
51.	active & passive transducers		Lecture
52.	Resistance, Capacitance,	EDOM:	
53.	inductance	FROM: 24-02-20	
54.	Strain gauges	24-02-20	
55.	LVDT		
56.	Piezo Electric transducers	TO:	interspersed
57.	Resistance Thermometers	28-02-20	with discussions
58.	Thermocouples		
59.	Thermistors		

60.	Sensistors		
61.	Tutorial		
UNIT - VI			
co6: Desig	n different transducers for measurement	nt of different	parameters
	nic Measurements & Instrumentations by K. Education - 2005.	Lal Kishore,	
62.	Measurement of physical parameters	FROM:	
63.	Measurement of force	02-03-20	
64.	Measurement of pressure, velocity		
65.	Measurement of humidity, moisture		
66.	Measurement of SPEED, proximity	TO:	
67.	Measurement of SPEED, proximity	09-03-20	Lecture
68.	Measurement of Displacement		interspersed
69.	Data acquisition systems		with discussions
70.	Data acquisition systems		
71.	Tutorial		

TB1:: Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.

TB2:: Electronic Measurements & Instrumentations by K. Lal Kishore, Pearson Education - 2005.

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PRINCIPAL SRK Institute of Technology ENIKEPADU, VIJAYAWADA-521 108

TENTATIVE LESSON PLAN: R1642042

	: ELECTRONIC MEASUREMENTS AND INSTRUME		
Section : Se		Page No: 01 of 03 Approved By: HOD	
	: 00 Prepared By : P. RAVEENDRA	Approved B	у : НОД
No. of	TOPIC	Date	Mode of Delivery
Periods			Delivery
UNIT -I	. 4 . 1		
CO1:: Sele	ct the instrument to be used based on the re	equirements	•
TB: Electro	onic instrumentation, second edition - H.S.Kalsi,	Tata McGraw	Hill, 2004.
1.	Performance characteristics of instruments		
2.	Static characteristics Accuracy, Resolution, Precision		
3.	Expected value, Error, Sensitivity Errors in		
	Measurement		
4.	Expected value, Error, Sensitivity Errors in	FROM:	
	Measurement	18-11-19	Lecture
5.	Dynamic Characteristics-speed of response		interspersed
6.	Fidelity, Lag and Dynamic error.		with discussions
7. 8.	Dynamic Characteristics-speed of response		With discussion.
9.	Fidelity, Lag and Dynamic error. DC Voltmeters- Multi-range		
10.	DC Voltmeters- Multi-range DC Voltmeters- Multi-range	-	
11.	Range extension/Solid state and differential		
11.	voltmeters		
12.	Tutorial	TO:	
13.	AC voltmeters- multi range, range extension	09-12-19	
14.	Shunt Thermo couple type RF ammeter		
15.	Ohmmeters series type, shunt type		Lecture interspersed
16.	Multimeter for Voltage, Current and resistance		with discussion
17.	elements		100
	Tutorial		
	lerstand and analyze different signal general onic instrumentation, second edition - H.S.Kalsi,		
18.	Signal Generator- fixed and variable	lata Micoray	2007.
19.	AF oscillators, AF sine wave signal generators		
20.	AF square wave signal generators		
		ED OV	
21.	Function Generators Square pulse, Random noise		
21. 22.	Function Generators Square pulse, Random noise Sweep generator	FROM:	
	Function Generators Square pulse, Random noise Sweep generator Arbitrary waveform generator	10-12-19	
22.	Sweep generator		
22. 23.	Sweep generator Arbitrary waveform generator Wave Analyzers		Lecture
22. 23. 24.	Sweep generator Arbitrary waveform generator		interspersed
22. 23. 24. 25.	Sweep generator Arbitrary waveform generator Wave Analyzers Harmonic Distortion Analyzers		

UNIT - III

CO3:: Understand the design of oscilloscopes for different applications

TB: Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.

29.	Oscilloscopes CRT features ,vertical amplifiers		
30.	horizontal deflection system		Lecture interspersed with discussions
31.	sweep, trigger pulse, delay line		
32.	sync selector circuits, simple CRO		
33.	Triggered sweep CRO	FROM:	
34.	Dual beam CRO ,Dual trace oscilloscope	18-12-19	
35.	Sampling oscilloscope,		
36.	storage oscilloscope	TO:	
37.	digital readout oscilloscope, DSO	07-01-20	discussions
38.	Lissajous method of frequency measurement	07-01-20	
39.	Standard specifications of CRO		
40.	probes for CRO- Active & Passive, attenuator type		
41.	Tutorial		

UNIT -IV

co4:: Use AC and DC bridges for relevant parameter measurement

TB:: Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.

42.	AC Bridges Measurement of inductance-		
	Maxwell's bridge.		Lecture interspersed with discussions
43.	Anderson bridge.		
44.	Measurement of capacitance -Shearing Bridge	FROM:	
45.	Wheat stone bridge	28-01-20	
46.	Wien's Bridge	TO:	
47.	Errors and precautions in using bridges	18-02-20	
48.	Q-meter.		
49.	Tutorial		

UNIT - V

CO5:: Design different transducers for measurement of different parameters

TB:: Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.

No. of Periods	TOPIC	DATE	Mode of Delivery
50.	Transducers		Lecture interspersed with discussions
51.	active & passive transducers		
52.	Resistance, Capacitance,	FROM:	
53.	inductance	24-02-20	
54.	Strain gauges	210220	
55.	LVDT		
56.	Piezo Electric transducers	ТО:	
57.	Resistance Thermometers	28-02-20	
58.	Thermocouples		
59.	Thermistors		

60.	Sensistors		
61.	Tutorial		
UNIT - VI			
co6: Design	gn different transducers for measurem	ent of different	parameters
	nic Measurements & Instrumentations by In Education - 2005.	K. Lal Kishore,	
62.	Measurement of physical parameters	FROM:	
63.	Measurement of force	02-03-20	
64.	Measurement of pressure, velocity		
65.	Measurement of humidity, moisture		
66.	Measurement of SPEED, proximity	TO:	
67.	Measurement of SPEED, proximity	09-03-20	Lecture
68.	Measurement of Displacement		interspersed
69.	Data acquisition systems		with discussions
70.	Data acquisition systems		
71.	Tutorial		

TB1:: Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.

TB2:: Electronic Measurements & Instrumentations by K. Lal Kishore, Pearson Education - 2005.

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Course Time	e: Satellit	e Communications	Committee and the second second second second	
Section: IVI	ECE-A	Date :18-11-2019	Page No: 01	of 03
Revision No	:00	Prepared By : V. SRILAKSHMI	Approved B	y: HOD
Fools : Black l	board, PPT	's,		
No. of		TOPIC	Date	Mode of
Periods				Delivery
UNIT –I	INTRO	DUCTION, ORBITAL MECHANICS AND	D LAUNCHERS	
used launc F1: Satellite Wiley P	and types th vehicle Commun ublication	e introduced to Understand the basic conce s of satellite communications & the concept s and orbital effects in satellite communica- nications – Timothy Pratt, Charles Bostian and as, 2 nd Edition, 2003. nications Engineering – Wilbur L. Pritchard, I	t of look angles, la tions. d Jeremy Allnutt,	wse,
G.Suyde	erhoud, 2 ⁿ	d Edition, Pearson Publications, 2003.		
1.	Origin	of Satellite Communications	18-11-2019	
2.		cal Back-ground	19-11-2019	
3.		Concepts of Satellite Communications	20-11-2019	
4.		ncy allocations for Satellite services	21-11-2019	
5.	Applica	ations	25-11-2019	
6.	Future	Trends of Satellite Communications	26-11-2019	
7.	Tutoria	1	27-11-2019	
8.	Orbital	Mechanics	28-11-2019	Lecture
9.	Look A	ngle determination	02-12-2019	interspersed
10.		perturbations	03-12-2019	with
11.	Orbit d	etermination	04-12-2019	discussions
12.	launche	es and launch vehicles	05-12-2019	
13.		effects in communication systems	09-12-2019	
	perform			
14.	Tutoria		10-12-2019	
T1: Satellite Wiley P	ent can un Commun Publication	LITE SUBSYSTEMS Inderstand about various satellite subsystem inications – Timothy Pratt, Charles Bostian an ins, 2 nd Edition, 2003.	d Jeremy Allnutt,	nality. WSE,
15.		e and orbit control system	11-12-2019	
16.		try, Tracking, Command and monitoring	12-12-2019	
17.	power s	·	16-12-2019	T
18.		nication subsystems	17-12-2019	Lecture
19.		e antennas	18-12-2019	interspersed with
20.		ent reliability and Space qualification	19-12-2019	discussions
21.	Tutoria	ıl	23-12-2019	discussions
F1: Satellite Wiley Pt 22. 23. 24.	Communublication Basic tr system Design	LITE LINK DESIGN Iderstand the concepts of satellite link designations – Timothy Pratt, Charles Bostian and s, 2 nd Edition, 2003. Inansmission theory Inoise temperature and G/T ratio Inoise temperature and G/T ratio	24-12-2019 26-12-2019 30-12-2019	n of C/N ratio WSE,
0.5			1 71 17 7010	
25. 26. 4	up link	of down links	31-12-2019 02-01-2020	

27.	up link design	06-01-2020	
28.	Design of satellite links for specified C/N	07-01-2020	
29.	Tutorial	08-01-2020	
30.	System design example	09-01-2020	
31.	System design example	18-01-2020	

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT - IV MU	LTIPLE ACCESS		
CO 4: Student	can understand the concepts of multiple access an	d various types of	multiple
	ies in satellite systems.		
	mmunications - Timothy Pratt, Charles Bostian and	Jeremy Allnutt, W	SE,
	ications, 2 nd Edition, 2003.		
32.	Frequency division multiple access (FDMA)	27-01-2020	
33.	Intermodulation	28-01-2020	
34.	Calculation of C/N	29-01-2020	
35.	Time division Multiple Access (TDMA)	30-01-2020	Lecture
36.	Frame structure	03-02-2020	interspersed
37.	Examples	04-02-2020	with
38.	Satellite Switched TDMA	05-02-2020	discussions
39.	Onboard processing	06-02-2020	
40.	DAMA	10-02-2020	
41.	Tutorial	11-02-2020	
42.	Code Division Multiple access (CDMA)	12-02-2020	
43.	Spread spectrum transmission and reception	13-02-2020	

STATIONARY SATELLITE SYSTEMS

CO 5: student can understand the concepts of Earth Station Technology & Low Earth Orbit and

Geo-Stationary satellite systems.
 T1: Satellite Communications – Timothy Pratt, Charles Bostian and Jeremy Allnutt, WSE, Wiley Publications, 2nd Edition, 2003.
 T2: Satellite Communications Engineering – Wilbur L. Pritchard, Robert A Nelson and Henri G.Suyderhoud, 2nd Edition, Pearson Publications, 2003.

43.	Introduction	17-02-2020	
44.	Transmitters	18-02-2020	
45.	Receivers	19-02-2020	
46.	Antennas	20-02-2020	
47.	Tracking systems	24-02-2020	Lecture
48.	Terrestrial interface	25-02-2020	interspersed
49.	Tutorial	26-02-2020	with
50.	Orbit consideration	27-02-2020	discussions
51.	coverage and frequency considerations	02-03-2020	
52.	Delay & Throughput considerations	03-03-2020	
53.	Delay & Throughput considerations	04-03-2020	
54. 0	-System considerations	05-03-2020	14265. No. 1446.
55. 1	Operational NGSO constellation Designs	10-03-2020	sign of down lid.
56.	Tutorial	11-03-2020	Branderica
tion for a process of the second seco		Var. 77	The second state of the se

UNIT - VI SATELLITE NAVIGATION & THE GLOBAL POSITIONING SYSTEM CO 6: Student can understand the concepts of satellite navigation, architecture and applications of GPS. T1: Satellite Communications - Timothy Pratt, Charles Bostian and Jeremy Allnutt, WSE, Wiley Publications, 2nd Edition, 2003. 57. Radio and Satellite Navigation 12-03-2020

57.	Radio and Satellite Navigation	12-03-2020	
58.	GPS Position Location principles	16-03-2020	
59.	GPS Receivers and codes	17-03-2020	Lecture
60.	Satellite signal acquisition, GPS Navigation Message	18-03-2020	interspersed
61.	GPS signal levels, GPS receiver operation	19-03-2020	with
62.	GPS C/A code accuracy, Differential GPS	19-03-2020	discussions

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PRINCIPAL SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA

LESSON PLAN: R1642043

		LESSON PLAN: R1642043		
		e Communications		
		Date :18-11-2019	Page No: 01	of 03
Revision No		Prepared By : V. SRILAKSHMI	Approved B	y: HOD
Tools : Black b	oard, PPT			
No. of		TOPIC	Date	Mode of
Periods				Delivery
used a launc F1: Satellite Wiley P	ent will be and types h vehicle Commur ublication	e introduced to Understand the basic conce s of satellite communications & the concept s and orbital effects in satellite communications – Timothy Pratt, Charles Bostian and as, 2 nd Edition, 2003.	epts, applications, t of look angles, la tions. d Jeremy Allnutt,	wse,
G.Suyde	crhoud, 2 ⁿ	nications Engineering – Wilbur L. Pritchard, I d Edition, Pearson Publications, 2003.	Robert A Nelson a	nd Henri
1.	Origin	of Satellite Communications	18-11-2019	
2.		cal Back-ground	19-11-2019	1
3.		Concepts of Satellite Communications	19-11-2019	1
4.		ncy allocations for Satellite services	20-11-2019	
5.	Applica		25-11-2019	
6.		Trends of Satellite Communications	26-11-2019	1
7.	Tutoria		26-11-2019	
8.	Orbital	Mechanics	27-11-2019	Lecture
9.	Look A	angle determination	02-12-2019	interspersed
10.		perturbations	03-12-2019	with
11.	Orbit d	etermination	03-12-2019	discussions
12.	launche	es and launch vehicles	04-12-2019	
13.	Orbital	effects in communication systems	09-12-2019	
	perforn	nance		
14.	Tutoria	1	10-12-2019	
JNIT –II		LITE SUBSYSTEMS		
T1: Satellite	Commu	nderstand about various satellite subsystem nications – Timothy Pratt, Charles Bostian an ns, 2 nd Edition, 2003.		•
15.		e and orbit control system	10-12-2019	
16.		try, Tracking, Command and monitoring	11-12-2019	
17.		systems	16-12-2019	
18.	1	nication subsystems	17-12-2019	Lecture
19.		e antennas	17-12-2019	interspersed
20.	Equipm	ent reliability and Space qualification	18-12-2019	with
21.	Tutori		23-12-2019	discussions
JNIT - III		LITE LINK DESIGN		
O 3: Stude 1: Satellite Wiley Po	ent can un Commun ublication	nderstand the concepts of satellite link desications – Timothy Pratt, Charles Bostian and s, 2 nd Edition, 2003.	d Jeremy Allnutt, V	
22.		ransmission theory	24-12-2019	
23.		noise temperature and G/T ratio	24-12-2019	
24.		of down links	30-12-2019	
25.		of down links	31-12-2019	
26.	up link	design	31-12-2019	Part of the second second

27.	up link design	06-01-2020
28.	Design of satellite links for specified C/N	07-01-2020
29.	Tutorial	07-01-2020
	System design example	08-01-2020
31.	System design example	18-01-2020

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT - IV MU	JLTIPLE ACCESS		
	can understand the concepts of multiple access and	various types of	f multiple
	ues in satellite systems.		
	ommunications – Timothy Pratt, Charles Bostian and J	eremy Allnutt, W	SE,
	ications, 2 nd Edition, 2003.	27.01.2020	
32.	Frequency division multiple access (FDMA)	27-01-2020	
33.	Intermodulation	28-01-2020	
34.	Calculation of C/N	28-01-2020	
35.	Time division Multiple Access (TDMA)	29-01-2020	Lecture
36.	Frame structure	03-02-2020	intersperse
37.	Examples	04-02-2020	with
38.	Satellite Switched TDMA	04-02-2020	discussion
39.	Onboard processing	05-02-2020	
40.	DAMA	10-02-2020	
41.	Tutorial	11-02-2020	
42.	Code Division Multiple access (CDMA)	11-02-2020	
43.	Spread spectrum transmission and reception	12-02-2020	

STATIONARY SATELLITE SYSTEMS

CO 5: student can understand the concepts of Earth Station Technology & Low Earth Orbit and

Geo-Stationary satellite systems.
 T1: Satellite Communications – Timothy Pratt, Charles Bostian and Jeremy Allnutt, WSE, Wiley Publications, 2nd Edition, 2003.
 T2: Satellite Communications Engineering – Wilbur L. Pritchard, Robert A Nelson and Henri G.Suyderhoud, 2nd Edition, Pearson Publications, 2003.

43.	Introduction	17-02-2020	
44.	Transmitters	18-02-2020	
45.	Receivers	18-02-2020	
46.	Antennas	19-02-2020	
47.	Tracking systems	24-02-2020	Lecture
48.	Terrestrial interface	25-02-2020	interspersed
49.	Tutorial	25-02-2020	with
50.	Orbit consideration	26-02-2020	discussions
51.	coverage and frequency considerations	02-03-2020	
52.	Delay & Throughput considerations	03-03-2020	
53.	Delay & Throughput considerations	03-03-2020	
54.	System considerations	04-03-2020	
55	Operational NGSO constellation Designs	10-03-2020	
56.	Tutorial	10-03-2020	

UNIT - VI SATELLITE NAVIGATION & THE GLOBAL POSITIONING SYSTEM CO 6: Student can understand the concepts of satellite navigation, architecture and applications of GPS.

T1: Satellite Communications – Timothy Pratt, Charles Bostian and Jeremy Allnutt, WSE, Wiley Publications, 2nd Edition, 2003.

57.	Radio and Satellite Navigation	11-03-2020	
58.	GPS Position Location principles	16-03-2020	
59.	GPS Receivers and codes	17-03-2020	Lecture
60.	Satellite signal acquisition, GPS Navigation Message	17-03-2020	interspersed
61.	GPS signal levels, GPS receiver operation	18-03-2020	with
62.	GPS C/A code accuracy, Differential GPS	19-03-2020	discussions

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PRINCIPAL SRK INSTITUTE OF TECHNOLOGY ENIKEPADU, VIJAYAWADA

TENTATIVE LESSON PLAN: RT42044A

	: Sec A Date : 19-11-19	Page No: 01	of 03
Revision		Approved By	
	Black board, PPT	,	
No. of Periods	TOPIC	Date	Mode of Delivery
UNIT -	I OVERVIEW OF WIRELESS SENSOR NETWORKS		
CO1: To Wireless	o understand basics of Wireless Sensor Networks and challenges face Sensor Networks. TB: Feng Zhao & Leonidas J. Guibas, "Wireless ion Processing Approach", Elsevier, 2007.	ed in designing S Sensor Networks	ensor nodes and s- An
1	Key definitions of sensor networks	19-11-19	
2	Advantages of sensor Networks and Driving Applications	19-11-19	Especial Control
3	Unique constraints an challenges	20-11-19	
4	Enabling Technologies for Wireless Sensor Networks	23-11-18	
5	Single-Node Architecture - Hardware Components, Energy	26,29-11-19	-
	Consumption of Sensor Nodes	20,29-11-19	Lecture
6	Operating Systems and Execution Environments	30-11-19	interspersed
7	Network Architecture -Sensor Network Scenarios	30-11-19	with
8	Optimization Goals and Figures of Merit, Gateway Concepts	03-12-19	discussions
9	Single-Node Architecture - Hardware Components, Energy	30-11-19,	
	Consumption of Sensor Nodes	03-12-19	
11	Tutorial	05-12-19	
UNIT-II	NETWORKING Technologies	03-12-19	
CO2: To	understand PANs, MANETs and WANETs.		
TB: Ad]	Hoc Wireless Networks: Architectures and Protocols - C. Siva I	Oom Murthy on	dDCM:
2004, PH	II	cam muriny an	u b.s.manoj,
12	Physical Layer and Transceiver Design Considerations	05.06	Lastura
	Physical Layer and Transceiver Design Considerations	05,06, 07-12-19	Lecture
12		07-12-19	interspersed
13 14	Personal area network (PAN), it's topology	07-12-19 12-12-19	interspersed with
13	Personal area network (PAN), it's topology Hidden node and exposed node problem	07-12-19 12-12-19 10-12-19	interspersed
13 14	Personal area network (PAN), it's topology	07-12-19 12-12-19 10-12-19 12-12-19	interspersed with
13 14 15 16 UNIT-II	Personal area network (PAN), it's topology Hidden node and exposed node problem Topologies of MANETs, WANETs Tutorial I MAC Protocols for Wireless Sensor Networks	07-12-19 12-12-19 10-12-19 12-12-19 19-12-19	interspersed with discussions
13 14 15 16 UNIT-II	Personal area network (PAN), it's topology Hidden node and exposed node problem Topologies of MANETs, WANETs Tutorial I MAC Protocols for Wireless Sensor Networks	07-12-19 12-12-19 10-12-19 12-12-19 19-12-19	interspersed with discussions
13 14 15 16 UNIT-II CO3: To	Personal area network (PAN), it's topology Hidden node and exposed node problem Topologies of MANETs, WANETs Tutorial I MAC Protocols for Wireless Sensor Networks of understand the issues in designing MAC protocol for WSN sused for WSN.	07-12-19 12-12-19 10-12-19 12-12-19 19-12-19 and to know of	interspersed with discussions
13 14 15 16 UNIT-II CO3: To protocols ΓΒ: Ad H	Personal area network (PAN), it's topology Hidden node and exposed node problem Topologies of MANETs, WANETs Tutorial I MAC Protocols for Wireless Sensor Networks understand the issues in designing MAC protocol for WSN used for WSN. Hoc Wireless Networks: Architectures and Protocols - C. Siya R	07-12-19 12-12-19 10-12-19 12-12-19 19-12-19 and to know of	interspersed with discussions
13 14 15 16 UNIT-II CO3: To protocols FB: Ad F	Personal area network (PAN), it's topology Hidden node and exposed node problem Topologies of MANETS, WANETS Tutorial I MAC Protocols for Wireless Sensor Networks understand the issues in designing MAC protocol for WSN used for WSN. Hoc Wireless Networks: Architectures and Protocols - C. Siva F	07-12-19 12-12-19 10-12-19 12-12-19 19-12-19 and to know of	interspersed with discussions
13 14 15 16 UNIT-II CO3: To protocols ΓΒ: Ad H	Personal area network (PAN), it's topology Hidden node and exposed node problem Topologies of MANETs, WANETs Tutorial I MAC Protocols for Wireless Sensor Networks understand the issues in designing MAC protocol for WSN used for WSN. Hoc Wireless Networks: Architectures and Protocols - C. Siva FI Issues in Designing a MAC protocol for Ad Hoc Wireless	07-12-19 12-12-19 10-12-19 12-12-19 19-12-19 and to know of	interspersed with discussions
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Period		Date	Mode of Delivery
28	MAC Protocols that use Directional Antennas	24-01-20	Lecture
30	Other MAC Protocols - Tutorial	25-01-20	intersperse with discussions
UNIT-I	V ROUTING PROTOCOLS		
DIOLOCO.	To understand the issues in designing routing protocol for WSN ls used for WSN. Hoc Wireless Networks: Architectures and Protocols - C. Siva HI Introduction, Issues in Designing a Routing Protocol for Ad Hoc Wireless Networks Classification of Routing Protocols Table –Driven Routing Protocols Table –Driven Routing Protocols On – Demand Routing Protocols On – Demand Routing Protocols Hybrid Routing Protocols Routing Protocols Routing Protocols with Efficient Flooding Mechanisms Hierarchical Routing Protocols	29-01-20 29-01-20 07-02-20 08-02-20 14-02-20 19-02-20 18-02-20	
43	Power Assert Post in Post	20-02-20	
44	Power – Aware Routing Protocols	21-02-20	with
	Proactive Routing-Tutorial TRANSPORT LAYER AND SECURITY PROTOCOLS	07-02-20	discussions
and	or WSN. Hoc Wireless Networks: Architectures and Protocols - C. Siva B.S.Manoj, 2004, PHI	Ram Murthy	
TB: Ad and 46 47 48	Hoc Wireless Networks: Architectures and Protocols - C. Siva B.S.Manoj, 2004, PHI Introduction Issues in Designing a Transport Layer Protocol	22-02-20 25-02-20	
46 47 48	Hoc Wireless Networks: Architectures and Protocols - C. Siva B.S.Manoj, 2004, PHI Introduction Issues in Designing a Transport Layer Protocol Design Goals of a Transport Layer Protocol for Ad Hoc Wireless Networks	22-02-20	Lecture
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61	State-centric programming	18-03-20	interspersed
62	APPLICATIONS of WSN: Ultra wide band radio	19-03-20	with
	communication		discussions
63	Wireless fidelity systems, Future directions	20-03-20	
64	Home automation, smart metering	20-03-20	
65	Tutorial	23-03-20	

Signature of the Faculty

Signature of the HOD

PRINCIPAL

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SRK Institute of Technology

ENIKEPADU, VIJAYAWADA-521 108

TENTATIVE LESSON PLAN: RT42044A

Course	Title: WIRELESS SENSOR NET	WORKS (R142044A)		
Section	: Sec B Date : 20-11-19		Page No: 01	of 03
	ISION NO: Prepared By: S.NEERA.JA Approved By: HOD			
	Black board, PPT			
No. of Periods			Date	Mode of Delivery
UNIT -	I OVERVIEW OF WIRELESS S	ENSOR NETWORKS		
Wireless	o understand basics of Wireless Sensor Sensor Networks. TB: Feng Zhao & L ion Processing Approach", Elsevier,	Networks and challenges fa Leonidas J. Guibas, "Wireles 2007.	ced in designing s Sensor Network	Sensor nodes and as- An
1	Key definitions of sensor network		20-11-19	
2	Advantages of sensor Networks a	nd Driving Applications	20-11-19	
3	Unique constraints an challenges		20 11 15	
4	Enabling Technologies for Wirele	ess Sensor Networks	23-11-18	
5	Single-Node Architecture - Hardy	vare Components, Energy	26-11-19	
	Consumption of Sensor Nodes			Lecture
6	Operating Systems and Execution	Environments	30-11-19	interspersed
7	Network Architecture -Sensor Net	twork Scenarios	30-11-19	with
8	Optimization Goals and Figures of	f Merit, Gateway Concept	s 03-12-19	discussions
9	Single-Node Architecture - Hardw	vare Components, Energy	30-11-19,	-
	Consumption of Sensor Nodes	1	03-12-19	
11	Tutorial		04-12-19	
CO2: To TB: Ad]	NETWORKING Technologies ounderstand PANs, MANETs and W Hoc Wireless Networks: Architectur	VANETs. res and Protocols - C. Siva		nd B.S.Manoj,
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Period		Date	Mode of Delivery
28	MAC Protocols that use Directional Antennas	24-01-20	Lecture
30	Other MAC Protocols - Tutorial	24-01-20	intersperse
			with
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32	Introduction, Issues in Designing a Routing Protocol for Ad	20.01.00	
	Hoc Wireless Networks	29-01-20	
33	Classification of Routing Protocols	20.01.20	
34	Table –Driven Routing Protocols	29-01-20	
35	Table –Driven Routing Protocols	07-02-20	
36	On – Demand Routing Protocols	08-02-20	
37	On – Demand Routing Protocols	14-02-20	
39	Hybrid Routing Protocols	14-02-20	
40	Routing Protocols with Eff. : 4 El 1: 26 :	19-02-20	
41	Routing Protocols with Efficient Flooding Mechanisms	18-02-20	Lecture
43	Hierarchical Routing Protocols	20-02-20	intersperse
44	Power – Aware Routing Protocols	21-02-20	with
	Proactive Routing-Tutorial	06-02-20	discussions
706. T	TRANSPORT LAYER AND SECURITY PROTOCOLS		
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61	State-centric programming	18-03-20	lintergranged
62	APPLICATIONS of WSN: Ultra wide band radio	19-03-20	interspersed with
THE RESERVE	communication	19 03 20	discussions
63	Wireless fidelity systems, Future directions	20-03-20	discussions
64	Home automation, smart metering	20-03-20	
65	Tutorial	21-03-20	

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