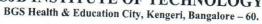


|| JAI SRI GURUDEV || Sri AdichunchanagiriShikshana Trust (R)

SJB INSTITUTE OF TECHNOLOGY







DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



Course Outcomes and CO-PO-PSO Articulation Matrix Batch 2016-20

						Seme	ster-l	/II		, A					
Subject: Ba	sic Elec	tronic	S						-	Sub	iect (Code:1	SEL N	115/25	,
					C	ourse	Outc	omes		Sub	jeci	Joue: 1	JELI	115/25	
CO1	Abili	ty to ap	oply th	e appli	cations	of dio	de in 1	ectifie	rs filte	er circu	ite and	DIT			
CO2	Abili	ty to an	nalyse	the bia	ising o	f BIT	Design	n simn	la gira	wita 1:1-	-	1.6	invert	ing and	d no
CO3	Unde	Ability to analyse the biasing of BJT. Design simple circuits like amplifiers (inverting and non inverting), comparators, adders, integrator and differentiator using OPAMPS Understand the basic concepts of number systems. Design different building blocks in digital electronics using logic gates and implement simple logic function using basic universal gates													
CO4	Analy	Analyse the functioning of flip-flops. Describe the architecture and interfacing of microcontroller													
CO5	Under	rstand ologies	the f	unctio	ning o	of a o	ciples	unicati	on sy	stem	analys	se diff	erent	modu	latio
					CO	DO DO	1					ducare			
	-				CU-	PU-PN	O M	annin	σ	ypes o	Trans	ducers			
COs					CO-		O M	appin	g	ypes o.	1 Trans	sducers	•	Page	
COs	1	2	3	4		PC	O M	appin	g					PSOs	
COs	1 2	2 2	3 2	4	5		O M	appin 8	g 9	10	11	sducers 12	1	PSOs	
	+		2	4		PC	O M	appin	g				1 2		
CO1	2	2	2	4		PC	O M	appin	g				1 2 2		
CO1	2	2	2	4		PC	O M	appin	g				1 2 2 2 2		
CO1 CO2 CO3	2 2 2	2 2 2	2	4		PC	O M	appin	g				1 2 2 2 2 2		
CO1 CO2 CO3 CO4	2 2 2 2	2 2 2 2	2	4		PC	O M	appin	g				1 2 2 2 2		_



Dept. of Electronics & Communication Engg.

SJB Institute of Technology

Bette 500060

Semester-III

ject: Engi	neering \	Mather	matics	-III						Subje	ct Cod	le:15M	AT31		
ject: Engi					Co	urse (utcon	ies							
CO1	Know				lic sig	gnals a	and Fo	urier							
CO2	Explair process	sing us	ing the	Fouri	er trans	storm a	and z-u	ansio	111.						5110
CO3	Employ	Employ appropriate numerical methods to solve algebraic and transcedental equations. Apply Green's theorem. Divergence theorem and Stokes theorem in various application in the													
CO4				District Control of		THEOTION	101 T101	16 91111	1111111		OUICIII				
CO5	Determ Utilize	41.00	anaant	c of f	unction	nal and	i their	variai	10115	II the	applica	tions o	of com	munic	atio
	system	s, deci	sion th	neory, s	synthes	sis and	optimi	zation	or dig	gital cir	cuits.				
	system	is, deci	sion th	neory, s	synthes	PO-PS	SO Ma	zation	or dig	gital cir	cuits.			PSOs	
COs	system	s, deci	sion th	eory, s	synthes	sis and	SO Ma	zation	or dig	ital cir	cuits.	12	1		
	system	s, deci	sion th	neory, s	CO-	PO-PS	optimi SO Ma Os	pping	or dig	gital Cil	curts.		1	PSOs	
COs	system 1	s, deci	sion th	neory, s	CO-	PO-PS	optimi SO Ma Os	pping	or dig	gital Cil	curts.		1	PSOs	
COs	system 1 3	2 2	sion th	neory, s	CO-	PO-PS	optimi SO Ma Os	pping	or dig	gital Cil	curts.		1	PSOs	
COs CO1 CO2	1 3 3 3	2 2 2	sion th	neory, s	CO-	PO-PS	optimi SO Ma Os	pping	or dig	gital Cil	curts.		1	PSOs	
COs CO1 CO2 CO3	1 3 3 3 3 3	2 2 2 2	sion th	neory, s	CO-	PO-PS	optimi SO Ma Os	pping	or dig	gital Cil	curts.		1	PSOs	

bject: Ana	log Flect	onics								Subje	ct Co	de:15E	ELN1	5/25	
bject. Ana.					Cot	irse C	utcor	nes					1.0	11 1	
CO1	Describe	rs.												аваск	
CO2	Describe	e the Ph	ase shif	ft, Wie	n bridge	e, tuned	and cr	ystal os	cillato	rs using	BJT/F	ET/UJT	•	-	
CO3	Calculat	ration.													nal .
CO4	Determinedel														
CO5	Determ amplifi	ine the	parame draw th	ters wh	acteristi	cs.				gn frequ	lency re	sponses	01 03		
	_				CO-1			apping	5	181				PSOs	
COs					_	PC	7	8	9	10	11	12	1	2	3
COS	1	2	3	4	5	6	/	0	,	10	11		2		
	No steel														
CO1	2	2											2		1
CO1	2 2	2	Dept.										2		-
			Dept.										2		
CO2	2	2 1											2		
CO2 CO3	2 2	2 1											2		



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Bengaluru-560060

ubject: Dig	gital Elec	ctronics								Sub	ject C	ode: 1	5EC33	}		
					4	Course	Outc	omes								
CO1	Acqu Quir	uire kno ne-McC	owledg lusky	ge of C Techni	ombin que.	ational	Logic	, Simp	lificat	ion Te	chniqu	es usir	ng Kar	naugh	Мар	
CO2	Acqu	ire kno	wledg	ge of : (Operati	on of I	Decode	ers, En	coders	, Multi	plexers	s, Add	ers and	Subtra	actor	
CO3	Acqu	Acquire knowledge of: Operation of Decoders, Encoders, Multiplexers, Adders and Subtracto Acquire knowledge of: Working of Latches, Flip-Flops, Designing Registers, Counte Designing Mealy, Moore Models and State Diagrams Analyse the performance of: Simplification Techniques using Karnaugh Mans, Quine-McClus														
CO4	Designing Mealy, Moore Models and State Diagrams Analyse the performance of: Simplification Techniques using Karnaugh Maps, Quine-McClust Technique and Synchronous Sequential Circuits															
CO5		gn and l		200				-	digital	circuits	5					
CO6		y the kr														
						-PO-P										
COs						P							T	PSOs		
COL	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
CO1	3	2				1						1		2		
CO2	3	3	3	1								1	2	2		
CO3	3	3	3	2	2	1			1			1		2	1	
CO4	2	3	3	2					1			1	2	2	1	
CO5	2	2	3	3	2				-				2	1		
CO6	2	2	3	3	2								1	1		
Average	2.5	2.5	3	2.2	2	2	_		1				1	1		

Subject: Net	work An	alysis								Sub	iect C	ode: 15	EC34			
					(Course	Outco	mes	0 1				DOST			
CO1	Distin	nguish	the ne	tworks	and di	scuss v	various	circui	tanaly	cic tecl	migue	g				
CO2	Analy	yze the	e circui etwork	t param	neters (during	switch	ing tra	nsient	s and a	pply L	aplace	transfe	orm to	sol	
CO3	Apply	Apply network theorems to solve a given network. Evaluate the frequency response for resonant circuits and the network parameters for two ponetworks														
CO4	Evalu	ate the	e frequ	ency re	esponse	e for r	esonan	t circu	its and	the n	etwork	param	neters i	for two	p pc	
					CO-	PO-P	SO Ma	pping								
COs						PO		118						PSOs		
		2	2	1	5	-								PSUS		
	1	2	3	4	3	6	7	8	Q	10	11	12	1			
CO1	2	2	3	4	3	0	7	8	9	10	11	12	1	2		
CO1		1		4	3	0	7	8	9	10	11	12	1 2			
The second secon		1	3	4	3	0	7	8	9	10	11	12	2			
CO2		1 2	3 2	4	3	0	7	8	9	10	11	12				
CO2 CO3	2	1	3	1.7	3	0	7	8	9	10	11	12	2		3	



bject: Elec	tronic Ins	trument	ation							Subje	ct Coc	le: 15E	C35			
oject. Elec					Co	urse (Outcor	nes								
CO1	Acquire various t			a and	digital	measill	חו סחוי	strunic	1115							
CO2	tachome	nalyse quantization, resolution and sensitivity in digital instruments such as frequency meters chometers, pH meters etc. Explain Microprocessor based instrumentation escribe functioning of various types of Oscilloscopes and signal generators.														
CO3	Describe	Describe functioning of various types of Oscilloscopes and signal generators.														
CO4	Describe	Describe functioning of various types of Oschloscopes and signal generators. Describe functioning of Measuring Instruments and design AC and DC bridges. Analyse the working of different types of transducers in various applications														
CO5	Analyse	the wo	rking	of diffe	erent ty	pes of	transd	ucers i	n vario	ous app	licatio	ns				
					CO-			pping						PSOs		
The Bearing						PC)s			1.0	11	12	1	2	3	
COs	1	2	3	4	5	6	7	8	9	10	11	12	2	2		
CO1	2	3				1							2	2		
CO2	2	2	2			1							2	2		
CO3	2	2	1			1							2	2	-	
CO4	2	2	3			1							2	2	_	
CO5	2		2			1				+			2	2		
Average	2	2.3	2			1							2			

bject: -Eng	ringering I	Electro	magne	tics						Subje	ct Cod	e: 15E	C36			
bject: -Eng					Co	urse (utcor	nes								
CO1	Evaluate methods		٦ 1		c field	due to	point	, linear								
CO2	Determine equation.															
CO3	Calculate	Calculate magnetic field, force, and potential energy with respect to magnetic materials.														
CO4	Apply M	Apply Maxwell's equations for time varying fields, EM waves in free space and conductors.														
CO5	Evaluate	power	rassoc	iated w	vith EN	1 wave	es usin	g Poyn	ting th	eorem.						
					CO-	PO-P	SO Ma	pping						PSOs		
						PC)s								3	
COs	1	2	3	4	5	6	7	8	9	10	11	12	2	2	-3	
		-											2			
CO1	2	2							1				4			
CO1	2 2	2														
CO2	1550												2			
	2	2											2 2			
CO2	2 2	2 2	2	2									2			

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Subject: -			Du.		474					Sub	ject C	ode: 1:	SECL:	37		
CO1	Tost	•	0 .			Course	e Outc	omes							-	
COI	Test ci	reuits c	of recti	fiers, c	lipping	g circui	ts, clar	mping	circuit	s and v	oltage	remiles	0.40			
CO ₂	Determ	nine the	chara	cteristi	cs of F	RIT and	1 EET	1:0		dila v	onage	regulat	ors.			
CO2					05 01 1	os i allo	TLEI	amplifi	ers and	d plot i	ts frequ	uency 1	espon	se.		
CO3	Compu	etermine the characteristics of BJT and FET amplifiers and plot its frequency response. Sompute the performance parameters of amplifiers and voltage regulators esign and test the basic BJT/FET amplifiers, BJT Power amplifier and oscillators														
CO ₄	Design	and tes	st the h	asic B	IT/EE	r omal	: C	DITT	id voit	age reg	urators	5				
				dore D.	CO	ampi	iners,	B11 Pc	wer ar	nplifie	r and o	scillato	ors			
					<u>C0</u>	-PO-P	SO M	apping	5	00						
COs	1					P	Os							DCO-		
CO1	1	2	3	4	5	6	7	8	9	10	11	12	1	PSOs		
CO1	3	3							3	10	11	12	_1_	2	3	
CO ₂	3	3											2	1		
CO3	3	3							3				2			
CO4	3	3							3				2			
	3	3											2			
Average				- 1					3							

Subject: -	0	-501101	nos La	0		~				Sub	ject C	ode: 1	5ECL	38	
CO1	Demo	netroto	tha to	41 / 1.1	2	Cours	e Outo	omes							
CO2	Demo: Design multip	and lexers	test	various multip	e of va	rious e binatio	xpress nal ci	ions an	d com	binatio as ad	nal circ	cuits us	sing lo	gic gat	es.
CO3	Realize													•	
CO4	Constr														
CO5	Simula	te full	adder a	and un	down	ners an	d shift	registe	ers.				1 - 1		
			water (ind up/											
COs					CO	-PO-P		apping	3						
COS	1	2	3	4	5	1	Os							PSOs	
CO1	3	3		3	3	6	7	8	9	10	11	12	1	2	3
CO ₂	3	3	3	3									2		
CO3	3	3	3	3									2		
CO4	3	3	3	3									2		
	3	3	3		3								2		
CO5			2		3								2		
CO5 Average	3	3	3	3	3								4		

Semester- IV

			/ - 4la	amatic	oc IV		4			1	Subjec	t Code	e: 15M	A141		
Subject: -	Engineer	ing N	latne	eman	3 1 V	Co	urse C	utcon	ies							
	Solve firs			1 1	OD	E origi	ng in	flow pt	oblems	susing	single	step a	nd mul	tistep	numer	ical
CO1	Solve firs	t and	seco	nd ord	ier OD	E alloi	ing in	no n p-	3.3.5.							1
COI	methods.		C		hum m	echani	cs em	plovin	g Bess	el's fu	nction	relatin	ng to c	cylind	ical p	olar
CO2	Solve pro	blem	is oi	quan	egendr	e's pol	vnomi	als rela	ting to	spheri	cal pola	ar coor	dinate	systen	15.	- O #Y /
002	coordinat	e syst	tems	lyticit	v note	ntial f	ields.	residue	s and	poles o	of comp	plex po	otential	s in fi	eld the	cory
	Understa	nd the	e ana	theor	y, por	cribe o	confor	mal and	d biline	ar tran	sforma	tion ar	ising it	aero	on the	ory,
CO ₃	and elect	nderstand the analyticity, potential fields, residues and poles of complex potentials in aerofoil theory, and electromagnetic theory. Describe conformal and bilinear transformation arising in aerofoil theory, uid flow visualization and image processing. Over problems on probability distributions relating to digital signal processing. Describing joint of the problems of the phastic matrix connected with the multivariable correlation problems.														
1711-114	Solve pr	Solve problems on probability distributions relating to digital signal processing. Describing joint														
CO4	probabili	Solve problems on probability distributions relating to digital signal processing. Determined the problems of probability distributions and stochastic matrix connected with the multivariable correlation problems for feasible random events. Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting or Draw the validity of the hypothesis proposed for the given sampling distribution in accepting the proposed for the given sampling distribution in accepting the proposed for the given sampling distribution in accepting the proposed for the given sampling distribution in accepting the given sampling distribution in accepting the given sampling distribution in acceptance of the given sampling di														
CO4	for feasil	ole rai	ndon	n even	ts.						- manlin	a dietr	ibution	in ac	ceptin	go
	Draw th	e val	idity	of the	e hypo	thesis	propo	sed to	r the g	iven s	ampim	drov ch	ain an	d solv	e prob	lem
	Dian un	c , ui			- ~			wahahi	lity ma	itmx ()I	a Iviai	KUV CI	IMILI WILL			
CO5	rejecting	the l	nvnot	thesis.	Denn	e trans	HOII F	noodoi	110)	-						
CO5	rejecting	the l	nvnot	thesis.	Denn	e trans	HOII F	noodoi	110)	-						
	rejecting related to Solve fin	the look discorts and	nvnot	thesis.	Denn	e trans	HOII F	noodoi	110)	-						
CO5	rejecting	the look discorts and	nvnot	thesis.	Denn	ndom p DE ari	orocess sing in	s. flow j	problen	ns usin					nume	erica
	rejecting related to Solve fin	the look discorts and	nvnot	thesis.	Denn	ndom p DE ari	orocess sing in	s. flow j	110)	ns usin		e step	and m	altiste	PSOs	erica
CO6	rejecting related to Solve fin methods	the look discorts and	rete d	thesis.	eter rai	DE ari	orocess sing in	s. so Ma	problen	ns usin					nume	erica
CO6	rejecting related to Solve für methods	the loodiscorst and	hypoterete d sec	thesis.	Denn	ndom p DE ari	orocessing in	so Ma	problem	ns usin	g singl	e step	and m	altiste	PSOs	erica
C06	rejecting related to Solve fin methods s	the lo discorst and	d sec	thesis.	eter rai	DE ari	orocessing in	s. so Ma	problem	ns usin	g singl	e step	and m	altiste	PSOs	erica
CO6	rejecting related to Solve fin methods	the lo disc	d second	thesis.	eter rai	DE ari	orocessing in	s. so Ma	problem	ns usin	g singl	e step	and m	altiste	PSOs	erica
C06	rejecting related to Solve fin methods Solve fin methods Solve fin methods Solve fin methods methods Solve fin methods methods methods methods Solve fin methods metho	the lo disc	d sec	thesis.	eter rai	DE ari	orocessing in	s. so Ma	problem	ns usin	g singl	e step	and m	altiste	PSOs	erica
CO6 CO CO	rejecting related to	the lo disc	d second	thesis.	eter rai	DE ari	orocessing in	s. so Ma	problem	ns usin	g singl	e step	and m	altiste	PSOs	erica
CO6 CO CO CO	rejecting related to Solve fin methods S	the lo disc	erete d second 2 2 2 2 2 2	thesis.	eter rai	DE ari	orocessing in	s. so Ma	problem	ns usin	g singl	e step	and m	altiste	PSOs	erica
CO6 CO CO CO	rejecting related to Solve fin methods	the lo disc est and	erete d second 2 2 2 2 2 2 2	thesis.	eter rai	DE ari	orocessing in	s. so Ma	problem	ns usin	g singl	e step	and m	altiste	PSOs	erica

										Subjec	t Cod	e: 15E0	C42			
ubject: -	Microproce	essor			Co	wwgo (utcon	nes								
					100000				hitecti	ire and	instruc	ction se	et of 80	86, 80)88,	
CO1	Explain the 8087, CISC of 8086 and	& RIS	C, Von	et of 80	086.	c 11ai v	ara ez				figurat	ion &	Timing	diagr	ams	
CO2	Write8086	Assemb	ly leve	el prog	grams u	ising th	ne 8080	ros	iction	SCI						
CO3	Write mod	te 8086 Assembly level programs using the 8086 instruction set te modular programs using procedures and macros. te 8086 Stack and Interrupts programming rface 8086 to Static memory chips and 8255, 8254, 0808 ADC, 0800 DAC, Keyboard, Display														
CO4	Write 808	Stack a	and Int	errupt	s progr	ammii	1g 8255	8254	0808	ADC, 0	800 D	AC, K	eyboar	d, Dis	pla	
CO5	Interface 8	8086 to er motor	Static :	memo	ry cnil	-11a to	bandle	Keybo	pard an	d Displ	ay.					
CO6	use INT 2	1 DOS	interru	pt fun	ction c	alls to	nanuic	Reyor	- Car Car Car			>>				
					CO	-PU-P	SO M	apping						PSOs		
					CO	PO-P	Os NI	apping	•			12	1	PSOs 2	_	
COs		2	3	4	5	-PU-P	SO M	apping 8	9	10	11	12	1 2		_	
	3 1				CO	PO-P	Os NI	apping	•			12	1		_	
COs	3 1 1 3				CO	PO-P	Os NI	apping	•			12	1 2		_	
COs	3 1 3 2 3	2	3		CO	PO-P	Os NI	apping	•			12	2 2		_	
COs CO1	3 1 3 2 3 3 3 3	2	3 2		CO	PO-P	Os NI	apping	•			12	1 2 2 2		_	
COs CO1 CO2	3 1 3 2 3 3 4 2	2 2 2	2 2		CO	PO-P	Os NI	apping	•			12	1 2 2 2 2	2	_	
COs CO2 CO2	3 1 3 2 3 3 3 4 2 5 3	2 2 2 2	2 2 2		CO	PO-P	Os NI	apping	•			12	1 2 2 2 2 2 2	1 1	3	

Subject: -	Control	ystems								Sub	ject C	ode: 15	EC43		
	1					Course									
CO1	system	the bears (electronic transfer the contraction)	ectrical	circui	it, mec	hanica	land	electro	mechr	ical ex	cteme	conti	of var	rious c	ontro ndin
CO2		be quar													
CO3	Unders meet st	stand th tability	ne dete	rmine find th	the sta	bility	using	the Ro	uth-H	urwitz	technic	que, ro	ot-loc	us des	ign t
CO ₄		e stabil							Rode	nlot at	nd Nyc	miet pl	ot.		
CO5	Find th	ne digit on and r	al resp	onses	from t	he trai	nsfer f	unction	draw	the blo	ock di	agram	from 1	the dy	nami
						-PO-P	SO M	apping				···			
Macrosco							Os							PSOs	
COs		_												1 31 10	
COs	1	2	3	4	5	6	7	8	9	10	11	12	1	_	_
COs CO1	3	2	1	2	5	6	7	8	9	10	11	12	1 2	2	_
The second	-		1 2		5	6	7	8	9	10	11	12	2	_	_
CO1	3	2	1	2	5	6	7	8	9	10	11	12	2	_	_
CO1	3 2	2 2	1 2	2 2	5	6	7	8	9	10	11	12	2	_	3
CO1 CO2 CO3	3 2 2	2 2 3	1 2 2	2 2 2	5	6	7	8	9	10	11	12	2	_	_

Subject: -	orgnais a	nd Sys	tems							Sub	ject C	ode: 15	EC44		
						Course	Outo	omes							
CO1	Classif and de	y the termin	signals istic/ra	as con	ntinuoi signals	us/disc	rete ,p	eriodic	and a	periodi	c, ever	n and o	odd, ei	nergy	pow
CO2	Detern discret	nine th	e line	arity,	causali	ty, tin	ne-inva	riance	and s	tability	prope	erties o	of con	tinuou	s ar
CO3	Compu	ite the ution s	respor um.	ise of	a Cont	tinuous	and I	Discrete	e LTI	system	using	convol	ution	integra	al ar
CO4	Determ analysi	ine th	e spec	etral c	haracte	eristics	of co	ontinuo	ous and	d discr	ete tir	ne sign	nal us	ing F	ourie
CO5	Compu	te Z-tr	ansfori	ns, inv	erse Z	- transf	forms a	and trai	nsfer fi	nction	s of co	malay	TT		
					CO	-PO-P	SO M	apping	J T	inction	3 01 00	inpiex .	LIISy	stems.	
COs							Os	FF	-					PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	T	1
CO1	3	2	2					-	,	10	11	14		2	3
CO2	3	2	2										2		
COZ		_	2										2		
CO ₃	3	2	4										2		
	3	2											-		
CO3	-		2										2		
CO3	3	2											2 2 2		

ubject -	Principles	of Con	munic	ation S	System	S				Subje	ect Coc	le: 15E	C45		
ubject.					C	ourse									
CO1	Determine	the per	forma	nce of	analog	modul	ation s	cheme	s in tin	ne and	freque	ncy dor	nains.		
CO2	Determine	the per	forma	nce of	system	s for g	enerati	on and	detect	ion of 1	modula	ated ana	alog si	gnals.	
соз	Characteri Fourier tra	ze anal	og sig	nals in	n time	doma	in as r	andom	proce	sses ar	nd in f	requen	cy do	main 1	usin
CO4	Characteri	ze the i	nfluen	ce of c	hannel	on ana	alog m	odulate	ed sign	als		n mad	ulation	and	nuls
CO5	Understan code modu	d the c	haract	eristics	of pu	lse am	plitude	modu	ilation,	puise	positio	on mou	ulatioi	i and	puis
					CO	-PO-P	SO M	apping	7						
								-PF8	-					DCOs	
		- 1				P	Os					10	1	PSOs	
COs	1	2	3	4	5	P(8	9	10	11	12	1	PSOs 2	
	1 1	2 2	3	4	5					10	11	12	2		
CO1	1 1 2		3	4	5					10	11	12	1 2 2		
CO1	1 2	2	3	4	5					10	11	12	1 2 2 2		_
CO1 CO2 CO3	1 2 3	2	3	4	5					10	11	12	1 2 2 2 2		
CO1	1 2 3 2	2 2 1	3	4	5					10	11	12	1 2 2 2		3

Cabicate	Linear Inte	grated (Circuit	S						Subje	ct Cod	le: 15E	C46		
subject: -					C	ourse	Outco	mes							
CO1	Explain O	o-Amp	circuit	and p	arame	ters in	cluding	CMR	R, PSI	RR, Inp	out &	Output	Imped	lances	and
CO1															
CO2	Slew Rate. Design Open Amplifiers	1 1:	17-	14000 L	COLLOTTIE	21"									
CO3	Test circuit Precision	110													
CO4	Test circu Sample & Divider.	Hold,	Differ	rentiato	or/ Inte	egrator	Circu	its, Pe	ak De	icciois,	Oscii	iators (
CO5	Divider. Design fin Regulators	mainal	$\Omega_{n-\Delta n}$	nnc											
			C	1.	ICa in	nhaca /	detecto	r VCC	DAC	. ADC	and T	imer.			
CO6	Explain ap	plication	ons of	linear]	ICs in	phase	detecto	r, VCC), DAC	C, ADC	and T	imer.			
CO6	Explain ap	plication	ons of	linear]	CO CO	-PO-P	SO M	r, VCC apping), DAC	C, ADC	and T	imer.		PSOs	
CO6	Explain ap	plication			CO	-PO-P	SO M Os	r, VCC apping	9, DAC	10	and Ti	12	1	PSOs 2	3
COs	Explain ap	pplication 2	ons of	linear]	CO 5	-PO-F	Os M	apping	<u> </u>				1		1
COs	Explain ap	plication			CO	-PO-F	Os M	apping	<u> </u>						1
COs CO1 CO2	Explain ap	pplication 2 2 2	3	4	CO	-PO-F	Os M	apping	<u> </u>				1		1
COs	1 2 1 3 1	2	3	4	CO	-PO-F	Os M	apping	<u> </u>				2		1
COs CO1 CO2 CO3	1 2 1 1 1 1 1	2 2 2 2 2 2 2	3 2	2 1	CO	-PO-F	Os M	apping	<u> </u>				1		1
COs CO1 CO2 CO3 CO4	1 2 1 1 1 1 5 1 1	2	3 2 2 2	2 1 1	CO	-PO-F	Os M	apping	<u> </u>				2		1

	- Microp	1000330	n Lau							Sub	oject C	Code: 1	5ECL	47	
	XX7 **				· ·	Cour	se Out	comes					*		
CO1	Write an operatio	nd exe ns. ·	cute 80)86 as	sembly	level	progra	ams to	perfor	m data	transf	er, arit	hmeti	c and	logic
CO ₂	Understa	and ass	embler	direct	ives b	ron ole	1								J
CO3	Understa Write an	d exec	ute 808	6 asse	mbly le	evel pro	ograms	s to sor	ns and l	DOS 2	lH Inte	errupts			
CO4	Perform instruction	string	transfe	r, strii	ng reve	ersing,	search	ing a c	characte	er in a	string	with s	tring	rray. manipu	ılati
CO5	Utilize p	rocedu	res and	macro	oc in no	0.0000		005						1	
CO6	Demonst stepper n	rate th	e inter	facino	of 80	86 mit	h 7	V COLUMNIA	display	, matr	ix key	board.	logica	al cont	#011a
	11	10101, 1	IDC, D	rac, a	na LD	R for si	imple a	applica	tions.				108100	ii com	10116
			100, 0	AC, a			1	.PP.rea	tions,		-			ir com	10116
COs			100, 10	AC, a)-PO-1	PSO N	applica Iappin	tions,		-				
	1	2	3	4)-PO-1	1	Iappin	g			1		PSOs	
CO1					C	D-PO-1 P	PSO M	.PP.rea	tions,	10	11	12	1		
	1	2	3		C	D-PO-1 P	PSO M	Iappin	g			1	1 2	PSOs	
CO1	1 3	2 2	3 2 2	4 1 1	C	D-PO-1 P	PSO M	Iappin	g			1	1	PSOs	
CO1	1 3 3	2 2 2	3 2 2 2	4 1 1	C	D-PO-1 P	PSO M	Iappin	g			1	1 2	PSOs	
CO1 CO2 CO3	1 3 3 3	2 2 2	3 2 2	4 1 1	C	D-PO-1 P	PSO M	Iappin	g			1	1 2 2	PSOs	
CO1 CO2 CO3 CO4	1 3 3 3 3	2 2 2 2 1	3 2 2 2 2 2	4 1 1	5	D-PO-1 P	PSO M	Iappin	g			1	1 2 2 2	PSOs	
CO1 CO2 CO3 CO4 CO5	1 3 3 3 3 3 3	2 2 2 2 1 1	3 2 2 2 2	4 1 1	C	D-PO-1 P	PSO M	Iappin	g			1	1 2 2 2 2	PSOs	

	Linear I	oo unu	Comm	numca	non La	D		ALC: Y		Sub	ject C	ode: 1	5ECI	18	
CO1	0:					Cour	se Out	comes					JECE	70	
CO1	Gain	hands-	on exp	erience	e in AN	I and I	FM tec	hnique	s frequ	iency sy	rnthos				
CO2	Gain	hands-	on exp	erience	e in pul	se and	flat to	p samp	ling ted	chnique	ymmesi	S			
CO ₃										given ap					
CO4	Desig	n and a	inalyze	the pe	erforma	ince of	instru	mentat	ion am	plifier,	LPF, I	on. HPF, D	AC ar	nd osci	illato
CO5	Under	stand i	the app	plicatio	ons of	Linear	IC fo	r addit	tion, in	tegratic	n and	555 +	mon		
			uis/Du	303						- 0- 1111	ii uiiu	333 ti	mer (perati	ons
		0.61	ars/pu	iscs.							- unu	333 ti	iller (peran	ons
COs		0.81	urs/pur	1505.)-PO-]	PSO N	Iappin				333 []	iller (
	1	2	3	4)-PO-]		Iappin	g				mer (PSOs	
COs					CC)-PO-] P	PSO N			10	11	12	1		S
	1	2		4 3	CC)-PO-] P	PSO N	Iappin	g				1 3	PSO	S
CO1	1 3	2 3		3 3	CC)-PO-] P	PSO N	Iappin	g				1	PSO	S
CO1	1 3 3	2 3		3 3 3	CC)-PO-] P	PSO N	Iappin	g				1 3	PSO	S
CO1 CO2 CO3	1 3 3 3	3 3	3	3 3 3 3	CC)-PO-] P	PSO N	Iappin	g				1 3 3	PSO	S
CO1 CO2 CO3 CO4	1 3 3 3 3	3 3	3	3 3 3	CC)-PO-] P	PSO N	Iappin	g				1 3 3	PSOs	

Semester- V

oject: - M	anageme	nt and	Entrep	reneur	ship D	evelop	ment			Subje	ct Cod	le: 15E	S51		
oject w					C	ourse	Outco	mes							
CO1	Learn an	nd expl	ain bas	sic is n	nanage	ment a	nd acq	uire bas	sic mar	nageria	l skills				
CO2	Analyze	the na	iture, p	urpose	& obj	ectives	of Pla	nning,	Organi	zing &	Staffi	ng.			
CO3	Develop	the fa	ctual l	eadersl	nip qua	lities f	or dev	elopme	nt of o	rganiza	tions.				
CO4	Learn a	nd buil	d the c	lualitie	s and c	haract	eristics	of bus	iness e	thics an	develo	eprene	and i	nstitut	ion
CO5	Learn a Describ support		The second second	111	0 110 0110	ter on	1 imni	amem.							
CO6	Support	strate t	he proj	ject ma	nagem	ent, pr	oduct	plannin	g, proj	ect des	igii aii	d Hetwi	ork are	11) 010.	
					CO	-PO-P	SO M	apping	,					PSOs	
COs							Os	8	9	10	11	12	1	2	3
COS	1	2	3	4	5	6	7	0	7	10	11	1-			1
CO1	2					2						2			
CO ₂						2				-					
CO3								3	2	-		2			
CO4										3		2			
CO5									2		2		-		+
CO6	2							2	_	-	2	1 2			+
Average	2		_	_	2	-	-	2.5	2	3	2	2			

bject: - D	igital Sign	al Pro	cessin	g		13				Subje	ct Cod	le: 15E	C52		
ubject D					C	course	Outco	mes							
CO1	Determin	ne the	respon	se of I	TIsys	tems u	sing ti	ne don	nain an	d DFT	technic	ques	-		
CO2	Compute														
CO3	Comput									ng appro	oach				
CO4	Design	of Dig	ital IIF	and F	IR filt	ers	1 C		allal fo	rm and	lattice	structi	ires		W
CO5	Realizat	ion of	filters	in dire	ect for	n, caso	ade to	rm, par	anerro	IIII anu	Tattice	Judett			
					CC			apping	<u> </u>					PSOs	
COs		•	2	4	5	6 6	Os 7	8	9	10	11	12	1	2	
	1	2	3	4	3	U	,						3		
CO1	2	2	1	2									3	1	
CO2	3	2	2	3									3		
CO3	2	2	3	2						-			3		
CO4	2	2	3	1									3		+
CO5	2	2	1				-						3		1
Average	2.2	2	2	2											

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Subject: -	Verilog I	HDL				421 - 1 - 1 - 1	Aug to the state of			Subj	ect Co	de: 15	EC53		
							e Outo	1		,					
CO1	Deteri	nine th	e respo	nse of	LTIsy	stems	using t	ime do	main a	nd DFT	techn	iques			
CO2			T of re	The state of the s				-							
CO3	Comp	utation	of DF	T usin	g FFT	algorit	hms ar	nd linea	r filteri	ng appi	oach				
CO4	Design	n of Di	gital III	R and	FIR fil	ters									
CO5							cade fo	orm, pa	rallel fo	orm and	lattice	e struct	ures		
								Tappin							
COs						- 1111111111111111111111111111111111111	Os		0					PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	1	1										2		
CO ₂	2	1	1								-		2	1	
CO3	3	2	1										2	1	
CO4	3	1	2										2	1	-
CO5	3	1	1										2	1	
Average	2.6	1.2	1.2										2	1	

Subject	Informat	ion Th	eory &	Codin	ıg					Subi	ect Co	de: 15	EC54		
						Cours	e Out	comes							
CO1	Expla Inform	in condination	cept of and Or	Deper der of	ndent &	& Inde	pender	nt Sour	ce, mea	asure o	f infor	mation	, Entro	ру, К	ate o
CO2	Repre Algor	sent the	e inform	mation	using	Shann	on End	oding,	Shanno	on Fano	, Prefi	x and I	Huffma	n Enc	odin
CO3	Mode proba	l the bilities	continu	ious a	nd dis	screte	comm	unicati	on cha	nnels	using	input,	outpu	t and	join
CO4	Deterr	mine a & conv	codew	ord co	mprisi les	ng of	the ch	eck bits	comp	uted us	ing Li	near B	lock c	odes, o	cyclic
COF	Design	n the e	ncodin	o and	decod	in a sin	., ,		D1			1.			
CO5	codes,	BCH	and Go	lay co	des.	ing cir	cuits i	or Line	ear Blo	ck cod	es, cyc	clic cod	des, co	nvolu	tiona
COS	codes,	BCH	and Go	lay co	des.			or Line		ck cod	es, cyc	clic cod	des, co	onvolu	tiona
	codes,	BCH	and Go	lay co	des.)-PO-J				ck cod	es, cyc	elic cod	des, co		
COs	codes,	BCH a	and Go	lay co	des.)-PO-J	PSO M			10	11	12	des, co	PSOs 2	
	codes,	BCH	and Go	lay co	CC	D-PO-1	PSO M	Iappin	g				1 2	PSOs	
COs	codes,	2	and Go	lay co	CC	D-PO-1	PSO M	Iappin	g				1 2	PSOs	
COs	1 3	2 2	and Go	lay co	CC	D-PO-1	PSO M	Iappin	g				1 2 2	PSOs	
COs CO1 CO2	1 3 2	2 2 2 3	and Go	lay co	CC	D-PO-1	PSO M	Iappin	g				1 2 2 2	PSOs	
COs CO1 CO2 CO3	1 3 2 2 2	2 2 3 2	and Go	lay co	CC	D-PO-1	PSO M	Iappin	g				1 2 2	PSOs	

Head of Electronics & Cot 538 Insulus: of T Itengalaru-5

ubject: - C	nerating	system	S							Subje	ct Cod	le: 15E	C553		
ubject C							Outco								
CO1	Explain	the go	als, sti	ructure	, opera	tion a	nd type	es of op	erating	system	s.				
CO2	Apply s									3					
CO3	Explair	organ	ization	of file	e systei	ns and	IOCS	•							
CO4	Apply	suitable	techn	iques	for con	tiguou	s and 1	non-cor	ntiguou	memo	ry allo	cation.			
CO5	Describ	e mess	sage pa	assing,	deadlo	ock det	ection	and pro	evention	n metno	ous.				
18. 28.	all and a second				CC			Iappin	g					PSOs	
		11 34 1				P	Os		-	10	11	12	1	2	3
COs	1	2	3	4	5	6	7	8	9	10	11	12	1		
CO1	3	1											1		
CO2	1	2	3											1	
CO3	2	1											1	1	
CO4	1	2	3										1		
CO5	1	2	3										1	1	
Average	1.6	1.6	3	-	-	-	-	-	-	-	-	-	1	1	

bject: - P	rogramm	ing in	C++							Subje	ct Coo	le: 15E	C562		
oject 1					(Course	Outco	omes							
CO1	Explain	the ob	ject or	iented	progra	ammin	g c++ 1	progran	n struct	ure with	h all its	s comp	onents		
CO2	Develo	n fuction	ons usi	ng cla	sses an	d obje	cts.						740		
CO3	Apply														cier
CO4	Apply	the cor	ncept o	f inher	itance,	pointe	ers, vir	tual fun	ctions	and por	ymorp	cation	aturos		
CO5	Develo	p prog	rams u	sing si	uitable	I/O an	d file	operation	ons for (anneren	н арри	Cation			
					CC			Iappin	g					PSOs	
CO							Os	0	9	10	11	12	1	2	1 3
COs	1	2	3	4	5	6	7	8	9	10	11	12	2	2	
CO1	2	2					3 1 7						2	2	
CO ₂	2	2	2										2	2	
CO3	1		2							-			2	2	-
CO4		2	2							-			2	2	+
CO5	2	2	2								-		2	2	_
Average	2	2	2										2	1 2	

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Subject	Digital S	ignal P	rocess	sing La	b					Subj	ect Co	de: 15	ECL5	7	
								comes							
CO1	Under of sign	stand t	he con	cepts	of anal	og to d	ligital	convers	ion of s	signals	and fre	quency	/ doma	in san	nplin
CO2	Mode	lling of	discre	ete time	e signa	ls and	systen	ns and v	erificat	tion of i	ts prop	erties a	and res	sults.	
CO3	Imple	mentati	on of	discret	e comp	outatio	ns usir	ig DSP	process	sor and	verify	the res	ults.		
CO4	Realiz phase	e the d	igital 1 se.	filters ı	ising a	simul	ation to	ool and	a DSP	process	or and	verify	the fre	equenc	y an
					C	O-PO-	PSO N	Mappin	ıg						
COs					C		PSO N	Mappin	g					PSOs	
COs	1	2	3	4	C(Mappin	9	10	11	12	1	PSOs 2	_
COs	1 2	2 3	3	4		P				10	11	12	1 2	PSOs	_
	1 2 3		3	4		P				10	11	12	1 2 2		_
CO1	-	3	3	4		P				10	11	12	2		_
CO1	3	3 2		2	5	P				10	11	12			3

Subject	HDL La	b								Sub	ject Co	de: 1	5ECL	58	
						Cour	se Out	come	S						
CO1	Write and G	the V	erilog/ el Abs	VHDL	progr ns.	ams to	simul	late C	ombinati	onal ci	rcuits i	n Dat	aflow	, Behav	iour
CO2	Descr Descr	ibe iption	sequer and ob		circui nulatio		ike eforms	flip	flops	and	coun	ters	in	Behav	viour
CO3									on progra	mmable	e ICs a	nd tes	t the h	nardwar	e.
CO4									and obtain						
											-Territor	outpu			
					C	O-PO-	PSO I	Mapp	ing						
COs					C	300	PSO I	Mapp	ing					PSOS	:
COs	1	2	3	4	5	300		Mappi	ing 9	10	11	12	1	PSOs	1
COs	1 3	2 3	3 3	4 2		P				10	11	12	1	PSOs	3
	1 3 3			2		P				10	11	12	1 2		1
CO1		3	3	2 2		P				10	11	12	2		1
CO1	3	3	3	2		P				10	11	12	-		-

Semester-VI

ubject: - I	Digital C	ommur	nication	1						Subje	ect Coo	le: 15E	C61		
ubject 1						Course	Outc	omes						101	
CO1	Associ	ate and	apply	the co	ncepts	of ban	dpass	samplir	ng to we	ell spec	ified si	gnals a	ind cha	nnels	1
CO2	Analys	e perfo	rmanc	e para	imters	and tra	sfer ra	ites for	low pa	ass and	band]	pass sy	IIIOOI t	maci i	
CO3	Analys bandlin		1 1												
CO4	can be	demod	lulated	and es	stimate	ed at rec	ceiver	to mee	d distor	ic perfo	rmanc	e criter	ia		
CO5	Analyz	ze and	compu	te spre	ead spe	ctrum t	technic	ques.							
					C	O-PO-	PSO N	Iappin	g					PSOs	
						P	Os								3
COs	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	2	2										2		
CO2	3	3	2										2	2	
CO3	3	2	2										3	2	
The state of the s	3	2	2										2	3	
	3	1000	2			-							3	3	
CO4	_		1								-	-	-		
CO5	3	3	2.4		-							-	2.4	2.4	

ubject: - A	ARM Mi	crocon	troller	& Eml	bedded	Systen	ns			Subje	ct Cod	le: 15E	C62			
ubject P						Course	Outc	omes						21.0		
CO1	M3								set of							
CO2	Progra	m ARN	A Cort	ex M3	using	the var	ious ir	struction	ons and	C lang	uage fo	or diffe	rent ap	plicati	ions	
CO3	and att	ogram ARM Cortex M3 using the various instructions and C language for different applications and extrapolations and their selection method based on the characteristic dattributes of an embedded system. Evelop the hardware software co-design and firmware design approaches. Explain the need of real time operating system for embedded system applications.														
CO4	Develo	op the l	nardwa	re soft	ware c	o-desi	gn and	firmwa	are design	gn appr	oacnes	ontions				
CO5	Explai	n the n	eed of	real ti	me ope	erating	systen	1 for en	ibedded	systen	1 appii	Cations	•			
					C	O-PO-	PSO N	Iappin	g					PSOs		
						P	Os			10	11	12	1	2	3	
COs	1	2	3	4	5	6	7	8	9	10	11	12	3		-	
CO1	3		2										3		-	
CO2	3		2										3		-	
CO3	3	2									-		3		-	
CO4	3	2	2	1									3		+	
CONTROL OF THE PARTY OF THE PAR	3												3		+	
CO5																

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Subject: -	VLSIL	esign								Sub	ject C	ode: 15	EC63		
						Cour	se Ou	comes		-		* * *			
CO1	Learr chara	about cterist	t basic ics of in	constr	uction	and or	peratio	n of M	OSFT,	Fabrica	tion st	eps, Sta	atic ar	d Swi	tchin
CO2	Learn resist	Layo	ut, Stiend capa	ck dia	grams e	and u	ndersta	and Mo	OS tran	sistor p	arasiti	c chara	acteris	tics, i.	e., i
CO3	Unde	rstand		nds in	semico	onduct	or tech	inology	, and h	ow it ir	npacts	scaling	g and	perforr	nanc
CO4	Desig PLAs	n func	tional u	inits li	ke mul	ltiplier	s, parit	y gene	rator, ac	dders, n	nultipli	ers, RO	OMs, S	SRAM	s, and
CO5	Descr	ibe the	source	es and	effects	of clo	ck ske	w and s	verify ar	nd volid	oto the	daa:			
					C	O-PO-	PSO I	Mappin	no	id valid	ate the	design	1.		
COs							Os	- PP-	-8					PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2									10	11	12	2		3
CO ₂	1	2	2										2		_
CO3		2	1												
CO4	2	1	2										2		
CO5	1	2		2									2		
Average	1.7	1.8	1.7										2		
AVCIAGE													3		

Subject: -	Comp	uter Co	mmun	ication	Netwo	orks	11-			Sub	iect Co	ode: 15	EC64			
						Cour	se Out	comes				74101 10	LCOT			
CO1	Identif	y the pr	rotocol	ls and i	function	ns asso	ciated	with th	ne trans	port lav	er ceru	ices				
CO2	Descri	be the I	ayerın	g arch	itecture	e of co	mpute	netwo	orks and	disting	uish b	etween	the O	SI refe	erenc	
CO3	Disting	del and TCP/IP protocol suite. stinguish the basic network configurations and standards associated with each network instruct a network model and determine the routing of packets using different routing algorithms.														
CO4															ame	
					C	0-PO-	PSO I	Mappir	ıg		8 41116	Tone To	utilig t	ingorit	11115.	
COs							Os							PSOs		
	1	2	3	4	5	6	7	8	9	10	11	12	1			
CO1	2	2								10	11	12	1	2	3	
CO ₂	2	3											2			
CO3	2	2											2			
CO4	2	2											2			
		10-200						1		1			2			

Subject: -	Artificia	1 Neura	1 Netw	orks						Subje	ct Coc	le: 15E	C653		
subject.						Course	e Outc	omes							
CO1	1 1								eering,						
CO2	Under	stand t	he con	work r	and t	echniq	ues of	neura	l netwo	orks til	lough	the st	ady or		
CO3	Evalua	ate whe	ther ne	ural ne	etwork	s are a	ppropr	iate to	a partic	ular app	licatio	n.	take	to imr	orov
CO4		neural mance.	netwo	orks to					and to	know v	vnat s	ieps to	take)10 v
					C	O-PO-	PSUN								
	_					n		тарри	g					PSOs	
COs			2	1			Os 7		9	10	11	12	1	PSOs 2	-
COs	1	2	3	4	5	6		8		10	11	12	1 3		-
COs	1 3	2 2	2	4 3						10	11	12	3		-
	-									10	11	12	1		-
CO1	3	2	2							10	11	12	3	2	-
CO1	3 2	2 3	2	3						10	11	12	3		3

Subject: -	Digital S	witchi	ng Sys	tems						Subje	ct Coc	de: 151	EC654	-	
Subject.						Cours	e Outc	omes					1.1	.1	11 mito
CO1	Unders	ing.									compa	irison	with	tne	digita
CO2	Detern	nine the	e telec	ommui	nication	n traffi	c and i	ts meas	suremer	its					
CO3									switchi						
CO4	Descri	be the	softwa	re aspe	ects of	switch	ing sys	stems a	nd its n	naintena	ince.				
					C	O-PO-	PSO N	Iappin	ıg					PSC)c
						P	Os					-	1		
COs	1	2	3	4	5	6	7	8	9	10	11	12	2	2	3
CO1	2	2											2		
CO ₂	2	2											2	+	
CO3	2				1								2	-	
CO4	2												2	+	
Average	2	2											1 2		

Page 16

Subject: -	Digita	l Syste	m Desi	gn Usi	ng Ver	ilog				Sub	iect C	ode: 15	EC66	3	
						Cour	se Out	comes							
CO1	Desi	gn em	bedded ores.	syste	ms, us	ing sn	nall m	icrocor	itrollers	, large	r CPU	s/DSPs	s, or	hard o	r so
CO2	Desig	gn & ces.	Constru	ict the	comb	inatio	nal cir	cuits u	sing di	screte	gates	and pr	ogram	mable	log
CO3	Desc	ribe Ve	erilog n	nodel f	or sea	iential	circuit	s and te	ect natte	ern gene	matian				
CO4	Explo	ore the	differe	nt type	s of se	micon	ductor	mamor	ios and	their us	ration	•	~		
CO5	Desig	gn and m desig	symmes	sis of d	lifferer	t types	of pro	ocessor	and I/C) contro	ollers t	hat are	used i	n emb	<u>şn</u> edde
					C	O-PO-	PSO N	Mappin	ıg						-
COs					C		Os							PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	1	2								**	12	2		3
CO ₂	2	3	3												-
CO3	2	3	3										2		
CO4	2	2	3										2	1	
COF	2	3	2										2		
CO5			_										1		
Average	2.2	2.4	2.6										2		

Subject: -	1 ython	Applie	cation	Progra	mming	3				Sub	ject C	ode: 15	CS66	4	
						Cour	se Ou	comes	1						
CO1	Exan funct	nine Py ions	thon	syntax	and s	semant	ics and	d be fl	luent in	the us	se of	Python	flow	contro	ol aı
CO2	Demo	onstrate	profic	ciency	in han	dling S	trings	and Fil	e Syster	ms.					
CO3	Creat		and ma	nipula					core dat		ures li	ke List	s, Dict	tionari	es a
CO4					Object-	-Orient	ed Pro	oramm	ing as u	and in 1	D- 41				
CO5	Imple in Pyt	ment e	xempl	ary app	olicatio	ons rela	ated to	Netwo	rk Prog	rammin	ig, We	b Servi	ces an	d Data	bas
					C	O-PO-	DCO	-							
						0 1 0	1301	Mappir	ıg						
COs		-					Os	Aappi i	ıg					PSOs	
COs	1	2	3	4	5					10	11	12	1	PSOs	
COs	1 2		3	4		P	Os	1appir	1g 9	10	11	12	1	PSOs	
	1 2		3	4		P	Os			10	11	12	1 2		
CO1	1 2 1 2	2	3	4		P	Os			10	11	12	1 2		
CO1	1	2 1 2	1	1		P	Os			10	11	12	1 2		
CO1 CO2 CO3	1 2	2 1 2	1			P	Os			10	11	12	1 2	2	
CO1 CO2 CO3 CO4	1 2 2	2 1 2 2 1	1			P	Os			10	11	12	1 2		3

Subject: -	Embedo	led Co	ntrolle	r Lab						Subje	ect Co	de: 15I	ECL67		
Junger						Cours	e Outc	omes							
CO1	Unders	stand th	ne instr	ruction	set of	ARM	Cortex	M3, a	32 bit r	nicroco	ntrolle	r and tl	ne		
CO2	Progra	m ARI	M Cort	ex M3	using	the var	rious ir	structi	ons in a	ssembl	y level	langua	age		
CO3	Interfa														
CO4	Develo	op C la	nguage	e progr	ams ar	nd libra	ary fun	ctions t	for emb	edded s	ystem	applica	ations		
					C	O-PO-	PSO N	Iappin	g					DOO	
			The Parks			P	Os							PSOs	
COs	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	3	3	3								2	3	
CO2	2	3	2	2	3								2	1	
CO3	3	2	2	2	3									1	
CO4	2	2	2	2	3								3		
Average	2.5	2.5	2.3	2.3	3	-	-	-	-	-	-	-	2.3	1.6	1

Subject: -	Comput	er Netv	works ?	Lab						Subje	ect Coo	le: 15E	CL68		c-u-i
, u. j · · · ·						Cours	e Outo	omes						- 0	
CO1	Choose levels.		ole too	ls to n	nodel a	a netw	ork an	d unde	rstand t	he prot	ocols a	it vario	us OS	I refer	ence
CO2	Design	a suita	ible ne	twork	and si	mulate	using	a Netw	ork sim	ulator t	ool.				
CO3									g C/C+			g.			
CO4	Model	the net	works	for di					analyze	the res	ults.				
					C	O-PO-	PSO N	Aappin	ıg					DOO	
						P	Os							PSOs	_
COs	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	1	2											2		
CO2	1		2										2		
	1			2								Ton 1-	2		
CO3	1			2									2		
CO4	2	1		1107 10						-					-
Average	1.3	1.5	2	2									2		

Dept. of Electronics & Communication Engg SJB Institute of Technology Bengaluru-56006

Semester- VII

Subject: -	Micro	owave	and Ar	ntennas	5	the se	10110	1		Sub	iect C	ode: 15	FC71		-
						Cour	se Ou	tcomes							
CO1	Unde color	erstand image	image data	forma	ition a	nd the	role h	uman	visual s	ystem 1	olays i	n perce	eption	of gra	ay ar
CO2	Apply	y the k	cnowle	dge of	electr	omagn	etic th	eory to	unders	stand ar	nd ana	lyze w	avegu	ides, c	oaxi
CO3	Unde	rstand	and a	nalyze	the h	ehavio	r of r	nicrowa cations	ove der	rameter vices u	sing s	catterin	g par	ameter	's an
CO4	Under	rstand	and ana	alyze v	arious	antenr	a conf	iouratio	ons acco	ordina t	0 41	11			
					C	0-PO-	PSO I	Mappir	10	oruning t	o the a	ppiicat	10n		
COs					, press.		Os	Tappii	'S						
000	1	2	3	4	5	6	7	8	0	10				PSOs	
CO ₁	2	2				0	/	0	9	10	11	12	1	2	3
CO ₂	2	2	2												
CO ₃	2	3								-			2	2	
CO4	2	3	2										2		
Average	2.3	2	2										2	2	
	Control of the Contro					1				1			2		

Digit	al Ima	ge Pro	cessing						Sub	iect C	ode: 1	5EC72			
1					Cour	se Ou	tcomes								
Unde	rstand image	image data.	e forma	ation a	nd the	role h	uman	visual s	ystem	olays i	n perc	eption	of gra	ıy ar	
Apply	y imag	e proc	essing t	technic	ques in	both t	he spati	al and f	requen	ev (For	rier) c	lomain	c		
	nalysis of image segmentation techniques and to evaluate the Methodologies for segmentation.														
Cond	uct ind	epend	ent stuc	dy and	analys	is of Ir	nage Ei	nhancer	nent tec	hnique	ogies I	or segi	nentati	on.	
				C	O-PO-	PSO I	Mappir	19		mique					
					and the second second		- 11	8					Dao		
1	2	3	4	5		7	Q	0	10	11	1 1 2		PSOs		
3	2				0	,	0	9	10	11	12	1	2	3	
3	2	3	2									3			
1	2	1999		3											
2			3	3								2			
2.3	2	3	2.5	3											
	Unde color Apply Analy Cond 1 3 3 1 2	Understand color image Apply image Analysis of Conduct ind 1 2 3 2 3 2 1 2 2	Understand image color image data. Apply image process Analysis of image Conduct independence 1	Understand image format color image data. Apply image processing to the color image segment of the color image segment. Analysis of image segment of the color independent study. 1 2 3 4 3 2 3 2 3 2 1 2 3 2 3 2 3 2 3 2 3 2 3 2	Understand image formation a color image data. Apply image processing technic Analysis of image segmentation Conduct independent study and Conduct independent study and 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3	Cour Understand image formation and the color image data. Apply image processing techniques in Analysis of image segmentation technic Conduct independent study and analys CO-PO-PO-PO-PP-PP-PP-PP-PP-PP-PP-PP-PP-PP	Course Ou Understand image formation and the role h color image data. Apply image processing techniques in both the Analysis of image segmentation techniques a Conduct independent study and analysis of Ir CO-PO-PSO I POS 1 2 3 4 5 6 7 3 2 7 7 3 2 7 7 1 2 3 4 5 6 7 3 2 7 7 3 2 7 7 3 2 7 7 3 2 7 7 3 2 7 7 3 2 7 7 3 2 7 7 3 2 7 7 4 3 7 7 5 8 7 6 9 7 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Course Outcomes Understand image formation and the role human color image data. Apply image processing techniques in both the spatial conduct independent study and analysis of Image Enco-Po-Pso Mappin Pos 1 2 3 4 5 6 7 8 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3	Course Outcomes Understand image formation and the role human visual scolor image data. Apply image processing techniques in both the spatial and formalization and the role human visual scolor image data. Apply image processing techniques in both the spatial and formalization and to evaluate the conduct independent study and analysis of Image Enhancer CO-PO-PSO Mapping POS 1 2 3 4 5 6 7 8 9 3 2 3 2 9 3 2 3 2 9 1 2 3 3 2 9 1 2 3 3 2 9 1 2 3 3 9 1 3 3 9 1 4 5 6 7 8 9	Course Outcomes Understand image formation and the role human visual system processing techniques in both the spatial and frequence Analysis of image segmentation techniques and to evaluate the Met Conduct independent study and analysis of Image Enhancement techniques and to evaluate the Met CO-PO-PSO Mapping POS 1 2 3 4 5 6 7 8 9 10 3 2 3 2 3 2 10 1 2 3 3 2 3 2 10 2 3 3 2 3 2 10 2 3 3 2 3 2 10 2 3 3 2 3 2 10 2 3 3 3 2 3 3 2 10 2 3 3 2 3 3 2 10 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Course Outcomes Understand image formation and the role human visual system plays is color image data. Apply image processing techniques in both the spatial and frequency (For Analysis of image segmentation techniques and to evaluate the Methodole Conduct independent study and analysis of Image Enhancement techniques CO-PO-PSO Mapping POS 1 2 3 4 5 6 7 8 9 10 11 3 2 3 2 3 2 1 1 2 3 3 2 1 1 2 3 3 1 1 2 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 2 1 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 1 2 1 3 3 1 3 1	Course Outcomes Understand image formation and the role human visual system plays in percentage data. Apply image processing techniques in both the spatial and frequency (Fourier) of Analysis of image segmentation techniques and to evaluate the Methodologies of Conduct independent study and analysis of Image Enhancement techniques. CO-PO-PSO Mapping POS 1 2 3 4 5 6 7 8 9 10 11 12 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3	Course Outcomes Understand image formation and the role human visual system plays in perception color image data. Apply image processing techniques in both the spatial and frequency (Fourier) domain Analysis of image segmentation techniques and to evaluate the Methodologies for segmentation techniques and to evaluate the Methodologies for segmentation techniques and to evaluate the Methodologies for segmentation techniques. CO-PO-PSO Mapping POS 1 2 3 4 5 6 7 8 9 10 11 12 1 3 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3	Course Outcomes Understand image formation and the role human visual system plays in perception of grace color image data. Apply image processing techniques in both the spatial and frequency (Fourier) domains. Analysis of image segmentation techniques and to evaluate the Methodologies for segmentatic conduct independent study and analysis of Image Enhancement techniques. CO-PO-PSO Mapping POS 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 3 2 3 2 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3	

Head

Subject: -	Power 1	Electro	nics		fi.					Subje	ect Co	de: 15E	C73		
susjeen						Cours	e Outc	omes							
CO1	Unders	stand th	ne cons	structio	n and	workir	g of v	arious p	ower d	evices					
CO2	Design	and a	nalysis	of thy	ristor o	circuits	with o	lifferen	t trigge	ring con	ndition	s. •			
CO3	Learn														
CO4	Demor	nstrate various	and u	ndersta conditi	ons				nics circ	cuits ar	id mod	iels usi	ng mo	odern	1001
					C	O-PO-	PSO N	lappin	g					DCO.	-
						P	Os							PSOs	
															-
COs	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
	1 3	2	3	4	5	6	7	8	9	10	11	12	2	2	3
CO1	1 3		3	4	5	6	7	8	9	10	11	12	1 2 2	2	3
CO1	2	2	3		5		7	8	9	10	11	2		2	3
CO1	-			3		2	7	8	9	10				2	3
CO1	2		2		5		7	8	9	10	2 2			2	3

Subject: -	Multim	edia Co	ommu	nicatio	n					Subje	ect Coc	le: 15E	C741			
Justin						Course	e Outc	omes								
C01	Unders	tand th	e basi	cs of d	ifferen	t multi	media	networ	ksand a	pplicati	ions					
CO2	Unders	tand th	e diffe	erent co	ompres	sion te	echniqu	ies to c	ompres	s audio	and vi	deo			,	
CO3	Descril	escribe multimedia communication across networks nalyse different media types to represent them in digital form. ompress different types of text and images using different compressiontechniques and analyse														
CO4	Analys	e diffe	rent m	edia ty	pes to	repres	ent the	m in di	gital for	rm.					0 1210	
CO5	compre	ess diff	ferent	types	of text	and i	mages	using	differer	nt comp	ress101	ntechni	ques a	ind an	arys	
	DMS															
	DMS				C	O-PO-	PSO N	Aappin	ıg					DCO-		
	DMS				C		PSO N Os	Aappin						PSOs	_	
COs	DMS	2	3	4	C(/Iappin	9	10	11	12	1	PSOs 2	_	
COs	1 2	2	3	4		P				10	11	12	1 2		_	
COs CO1	1	1	3	4		P				10	11	12	1 2 2		_	
COs CO1 CO2	1 2 2	1 2	3	4		P				10	11	12	1 2		_	
COs CO1 CO2 CO3	1 2 2 2	1 2 2	3	4		P				10	11	12	1 2 2 2 2		_	
COs CO1 CO2	1 2 2	1 2	3	4		P				10	11	12	1 2 2 2		3	

Subject: -	DSP	Algor	ithms a	nd Ar	chitectu	ire				Sub	iect C	ode: 1	5EC75	1	
						Cou	rse Ou	tcomes	2	Jul	jeere	out. I	JEC/J	1	
CO1	Con	preher	nd the k	nowle	dge an	d conc	ents of	digital	signal p	rocess	ing too	l '	History		
CO2	Ond	cistant	of the	archit	ecture	of DS	Comr	nutation	nal build	ling blo	cks an	nnique	y the k	nowle	dge t
CO3	App	ly knov lining	wledge	of var	rious ty DSP p	vnes o	faddre	eccina r	nodes, pop prog	instruct	ions, i	nterru _l	ots, per	iphera blems	ls an usin
CO4	Deve	elop ba	sic alg	orithn	ns usin	g DSF	proce	essors a	and con	duct ex	perim	ents w	rith ass	embly	leve
CO5	devic	uss above and	out sync demons	chrono strate t	us seri	al inter	face an	nd mult	tichanne telemetr g on DS			rial por peech	t (McE Proces	SSP) or sing S	f DSI
					C	O-PO	-PSO	Mappii	g on DS	of Proc	essor.			205	
COs							Os	ppii	15					Dago	
5010 3000000	1	2	3	4	5	6	7	8	9	10	11	12	1	PSOs	
CO1	2	3	2							10	11	12	1	2	3
CO ₂	2	3	3										2		
CO ₃	3	3	3		2					-			2		
CO4	3	2	2		3							4=3	3		
CO5	3	2	2		3							1	3		
Average	2.6	2.6	2.4	_	2.6								3		
					2.0	1. The	-	_		1 1			2.6		

Subject: -	Adva	anced (Commi	inicatio	on Lab					Sub	iect C	ode: 15	ECL	16	
						Cour	se On	tcomes		Dub	jeere	oue. 1.	DECL	0	
CO ₁	Dete	rmine	the cha	racteri	stics ar	nd resn	onse	fmiore	wave de						
CO2	Dete it.	rmine	the cha	racteri	stics o	f micro	strip	antenna	as and c	compute	the p	aramete	ers ass	ociate	d wi
CO3	Simu		e digi	tal mo	dulatio	n sche	emes v		e displa						
CO4	Desig	gn and	test the	digita	1 modu	lation	circuit	s/system	ns and	1. 1	.1				
CO5	Deter	mine t	he loss	es in o	ntical f	Ther ar	d mag	s/syster	merical	display	the wa	veform	ıs.		
					C	O-PO-	PSO 1	Mappir	merical	apertur	e usin	g optica	al fibe	r link.	
COs							Os	Tappii	ig						
003	1	2	3	4	5	6	7	8	0	10				PSOs	
CO1	15 II III I	3		3		U		0	9	10	11	12	1	2	3
CO2		3		3									2		
CO3	3			3	3								3		
CO4	3		3	3	3	7									3
CO5				3									3		
Average	3	3	3	3	3								3		
- 0				3	3								2		3

Subject: -	VLSI L	ab					li veri			Subje	ect Co	de: 15E	CL77			
Subjecti						Course	e Outc	omes								
CO1	Develo	p the to	est ber	ich to s	simulte	the va	irious (digital o	circuits.			1. 0	1	la i ala	lovo	
CO2	Exami	camine and simulate basic CMOS circuits like inveter, common source amplifier and high level requits like OPAMP, ADC, circuits to meet desired parameter. Inalyse the concepts of AC, DC and transient analysis in analog circuits.														
CO3	Analys	se the c	oncep	ts of A	C,DC	and tra	nsient	analysi	is in ana	log circ						
CO4	Design	the ga	ites an	d reali	ze the s	shift re	gister,	adder u	sing ga	tes to m	eet de	sired pa	iramet	er.		
				and the second	C	O-PO-	PSO N	Aappin	ıg					DCO-		
						P	Os							PSOs	_	
COs	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
CO1	3	2			2							Ver 1	3	1		
	3	2			2								3	1		
CO2					100				-				3	1		
CO3	2	3	2		2					-		-	3	1		
CO4	3	2	2		2									1		
Average	2.8	2.3	. 2		2								2	1		

Semester-VIII

Subject: -	Wireles	s Cellu	lar and	d LTE	4GBro	adband				Subje	ect Coc	le: 15E	EC81		
Subjecti						Course	Oute	omes							-
CO1	Explair	1 4	11	manifi	ad in I	TE AG									
CO2	Analys	e the r	ole of	TE and re	radio	interfac	ce pro								
CO3	Demos		1												
CO4	Test a	nd Eva ort algo	aluate rithms	the po	× -= 3		f reso	urce m	nanagen	nent an	d paci	ket dat	a proc	cssing	and
									the state of the s						
					C			Iappin	g				-	PSOs	
CO-					C		PSO M			10	11	12	1	PSOs	3
COs	1	2	3	4	5	P(Tappin	9	10	11	12	1	2	3
COs	1 3	2 2	3	4		P				10	11	12	3	3	3
CO1	1 3 3		3	4		P(10	11	12	1 3 2	3 3	3
CO1		2	3	4		6 2				10	11	12	1 3 2 2	3 3 2	3
CO1	3	2 2	3	4		P6 2 2 2				10	11	12	1 3 2	3 3	3

3	Fiber C	pues a	x netw	orks						Sub	ject C	ode: 1:	SEC82		190
						Cour	se Ou	tcomes							
CO1	Unde	erstand agation	and de	escribe nissior	the ba	sic con	cepts	of option	cal fibe	r, classi	ify diff	erent t	ypes a	nd mo	des
CO2	Unde	istanu	and a	nalyze	the c	onstruc	ction,	workin	g princ	iple of	optica	unicati	ces, de	etector	s an
CO3	Expla ampli	in and	d dem	onstrat	e the	conce	pts of	WDM	I, activ	e and	passiv	e eler	nents	and c	ptica
CO4	Illusti	rate the	netwo	rking a	aspects	of opt	ical fil	per and	describ	e vario	16 ston	danda		4 1 .	1 .
					C	O-PO-	PSO I	Mappir	10	c variot	as stall	uarus a	issocia	ted wi	th it
COs				Second lines			Os	PP	-8					Dao	
003	1	2	3	4	5	6	7	8	9	10	11	1.5		PSOs	
	_					0	/	O	9	10	11	12	1	2	
C01	3	3	3												3
CO1	3	3	3										2		3
	-	3											2		3
CO2	3	-	2												3
CO2 CO3	3 2	3 2											2		3

Subject: -	Network	a a c	yber Se	curity						Sub	ject C	ode: 1	5EC83	5	
						Cour	se Ou	tcomes		v					
CO1	Abili	ty to le	earn vai	rious n	etwork	ing pr	otocol	s to pro	vide sec	nrity o	f the d		.1		
CO2	Onde	istanu	and an	alyze	ne vui	nerabi	lities i	n any c	omputir	ng syste	m for	differe	nt app	etwork lication	ıs ar
CO3	Apply	scien	ntific me	ethod t	o desig	gn anti	patterr	ns and p	erform	investig	ations				
CO4									in comp				tration		
					C	O-PO-	-PSO	Mappii	ng		otern t	dillilli	mation	1.	
COs							Os		8				T	Dago	
	1	2	3	4	5	6	7	8	9	10	11	10		PSOs	
CO ₁	2	3	1				-	0	9	10	11	12	1	2	3
CO2	3	3	3	3								3	3	3	
CO3		3		2.12				2				2		2	2
			3	3				3					3	2	2
CO4			3									2	1	_	
Average	2.5	3	2.5	3		_		2.5				2	1		2
								2.0	-	-	(=)	2.3	2.3	2.3	2

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	Internsh	: /D#10	faccio	nal Pr	actice					Subje	ect Co	de: 15	EC84			
ubject: -							Outco	omes								
						our sc	-illa gr	oh ac	teamy	ork co	mmur	ication	, ethic	al val	ues,	
CO1	Ability multidis	to de	velop ary cri	emplo tical th	yee-va inking	and ad	laptabi	lity.	ions of	nerfor	mance	on the	part o	f techn	ical	
CO2	and pro	Itidisciplinary critical thinking and adaptability. In an ifest the student to the environment and expectations of performance on the part of technical distribution of professional to practice in private and public sectors. It is a professional to practice in private and public sectors.														
CO3	Davelo	n work	habits	s and a	ttitude	s neces	sary fo	or succe	essful e	mploya	bility.	ies in t	he field	l of stu	dy.	
CO4	Adopti	ng the	ory and	d pract	ices lea	arnt by	the stu	idents to	o ennai	ice thei	aumi	103 111 0			-	
COT	1				CO	-PO-F	PSO N	Iappin	ıg					PSOs		
	T	NT.				P	Os						,		2	
COs		•	2	4	5	6	7	8	9	10	11	12	1	2	3	
000	1	2	3	4			-	3	3	2				2	2	
CO1		2	2		2	1		3	3	-	3		2	2		
CO2	2	2	2	2			2			-	-	2	_	1	2	
CO3								2	2	2	1	3		-		
		-	Complete Com	2		2	1		1		112	3	3	2		
CO4	3	2		2	-	_	1.5	2.5	2	2	2	3	2.5	2.3	2	
Average	2.5	2	2	2	2	1.5	1.5	2.3								

	-:4 XI	Corle								Subjec	et Cod	e: 15E	CP85		
bject: - P					(Course	Outco	mes						:	
	Identify	.1 1		of inte	rest an	d probl	em w	ith mult	idiscipl	inary a	pproac	ch by a	pplying	g acqu	irea
CO1	knowle	dge.	omain	01 11110	TOST an	a proor	1	an moth	andolog	ies wit	h nove	ltv & s	ocietal	releva	ance
CO2	Perform in it.	n requi	remen	t analy	sis and	I identii	y desi	gn men	hordwat	e/softy	vare C	lesign	from	a pro	duc
CO3	in it. Apply perspec														
CO4	Combi	ne all t	he mo	dules t	hrough	effecti	ve tea	m work	artere	Helene	tosting	o		1	
CO5	Task c	omplet	ion an	d comp	oilation	of the	projec	et report							
					C	O-PO-P	SO N	Tapping	<u> </u>					PSOs	
		11.				PC)s			10	11	12	1	2	3
COs	1	2	3	4	5	6	7	8	9	10	11	12	3		
CO1	3	3		3				3	-		2		3		
CO2		3	3	3		2		2	2		3		3		3
CO3	3	3			3		3		3					3	
CO4	3	3			3	3			3	-				3	
									3	3	3	3	-		-
	3	3			-	2.5	3	2.5	2.8	3	3	3	3	3	
CO5	_	3	3	3	3										

Subject: -	Seminar	•	Name of Street							Subj	ect Co	de: 15	ECS8:	5	
					0	Cour	se Out	comes							
CO1	Study edge t	, under	rstand logies.	and en	nphasi	ze the	informa	ation fr	om liter	al and l	beyond	literal	of var	ious c	utting
CO2	Based societ	on that, hea	he eng lth, saf	ineerin	ng kno	wledg	e, anal	lyze th	e comp	rehensi	ve sol	ution	to the	issue	s lik
CO3	To im	part sk	cills in	prepar	ing de	tailed r	eport d	escribi	ng the p	aper an	d resu	lts.			
CO4	Abilit	y to v	vork ir formati	ndepen	dently	and o	lemons	trate fo	or effec	tive co	llectio	n, ana	lyze a	nd org	ganiz
					C	O-PO	-PSO I	Mappir	1g						
COs						F	POs							PSOS	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	3		2	1							1	2		1
CO ₂	2	2		2		1		1					2	-	1
CO3											2		1	2	2
				_	1	1		1	2	1 2			1		1 4
CO4	1	1		2	1	2			3	3			2		

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