# KONGU ENGINEERING COLLEGE

(Autonomous Institution Affiliated to Anna University, Chennai)

PERUNDURAI ERODE – 638 060 TAMILNADU INDIA



# REGULATIONS, CURRICULUM & SYLLABI – 2024

(CHOICE BASED CREDIT SYSTEM AND OUTCOME BASED EDUCATION)

(For the students admitted from the academic year 2024 - 2025)

# BACHELOR OF ENGINEERING DEGREE IN ELECTRONICS AND COMMUNICATION ENGINEERING

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



# B.E. ELECTRONICS AND COMMUNICATION ENGINEERING CURRICULUM – R2024 (For the students admitted from the academic year 2024-25 onwards)

SEMESTER	R-I	_ 1				٠							
(*)			Н	ours /	Seme	ster			Max	imum N	larks		
Course Code	Course Title	С	ı	LI	TW	SL	TH	Cre dit	CA	ESE	Total	Cate gory	Туре
		L	Т	Р		JL	•••		OA.	LOL	Total	-	
Theory/The	eory with Practical					-							
24EGT11	English for Effective Communication - I	45	0	0	45	0	90	3	. 40	60	100	HS	С
24MAC11	Matrices and Ordinary Differential Equations	45	7	16	52	0	120	4	50	50	100	BS	Α
24CYT13	Chemistry For Electronics And Computer Systems	45	0	0	45	. 0	90	3	40	60	100	BS	С
24CSC11	Problem Solving and Programming in C	45	0	30	45	0	120	4	100	0	100	ES	ОТ
24ECT11	Circuits and Networks	30	15	0	15	30	90	3	40	60	100	ES	Α
24TAM01	Heritage of Tamils	15	. 0	0	15	0	30	1	100	0	100	HS	ОТ
Practical /	Employability Enhancement				- 0								
24CYL13	Chemistry Laboratory for Electronics And Computer Systems	0	0	30	0	0	30	1	60	40	100	BS	i.
24GCL12	Foundation Laboratory – Electrical, IoT and Web Technologies	0	0	90	0	0	90	3	100	0	100	ES	
24MNT12	Quantitative Aptitude – I	30	0	0	0	0	30	0	100	0	100	МС	
24MNT11	Student Induction Program	0	0	90	0	0	90	0	100	0	100	МС	
	Total Credits to be e	arne	d					22					

CI – Classroom Instructions, LI – Laboratory Instructions, TW – Term Work, SL – Self Learning, L – Lecture, T – Tutorial, P – Practical, C – Credit, TH – Total Hours, CA – Continuous Assessment, ESE – End Semester Examination.

Type: A - Analytical, D - Design using Hardware, S - Simulation using Coding, C - Concept, OC - Online course, OT - others

Signature of the Chairman

Board of Studies - ECE

# B.E. ELECTRONICS AND COMMUNICATION ENGINEERING CURRICULUM – R2024 (For the students admitted from the academic year 2024-25 onwards)

SEMESTER	<b>₹</b> –Ⅱ												
	•		Н	ours /	Seme	ster			Max	imum N	larks		
Course Code	Course Title	С	1	LI -	TW	SL	ТН	Cre dit	CA	ESE	Total	Cate gory	Туре
		L	Т	Р	IVV	SL	ות		CA	ESE	Total		
Theory/The	eory with Practical												
24EGT21	English for Effective Communication - II	45	0	0	45	0	90	3	40	60	100	HS	С
24MAC21	Multivariable Calculus and Complex Analysis	45	7	16	52	0	120	4	50	50	100	BS	Α
24PHT23	Physics For Electronics Engineering	45	0	0	45	0	90	3	40	60	100	BS	С
24MET11	Engineering Drawing	30	15	0	45	0	90	3	40	60	100	ES	Α
24CSC23	Data Structures using C	45	0	30	45	0	120	4	50	50	100	ES	Α
24TAM02	Tamils and Technology	15	0	0	15	0	30	1	100	0	100	HS	ОТ
Practical /	Employability Enhancement				10.								
24PHL23	Physics Laboratory For Electronics Engineering	0	0	30	0	0	30	1	60	40	100	BS	
24GCL11	Foundation Laboratory – Manufacturing, Design and Robotics	0	0	90	0	0	90	3	100	0	100	ES	
24MNT21	Quantitative Aptitude – II	30	0	0	0	0	30	0	100	0	100	МС	
24VEC11	Yoga and Values for Holistic Development	15	0	15	0	0	30	1	100	0	100	HS	
	Total Credits to be e	arne	Ŀ	u		-		23					

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Type: A - Analytical, D - Design using Hardware, S - Simulation using Coding, C - Concept, OC - Online course, OT - others

Signature of the Chairman

Board of Studies - ECE

# B.E. ELECTRONICS AND COMMUNICATION ENGINEERING CURRICULUM – R2024 (For the students admitted from the academic year 2024-25 onwards)

SEMESTER	R-III		ü				1		Ť		· ·		
			Н	ours /	Seme	ster		F.	Max	imum N	/larks		
Course Code	Course Title  CI LI  TW SL TH		Cre dit	CA	ESE	Total	Cate gory	Туре					
-			111	·	OA .	LJL	Total						
Theory/The	eory with Practical							2					
24MAT33	Probability and Random Process	45	15	0	60	0	120	4	40	60	100	BS	Α
24ITC33	Programming in Python	45	0	30	45	0	120	4	40	60	100	ES	ОТ
24ECT31	Digital Electronics	45	0	0	0	45	90	3	40	60	100	РС	A
24ECT32	Electromagnetic Fields	45	0	0	45	0	90	3	40	60	100	PC	Α
24ECT33	Electronic Devices	45	0	0	45	0	90	3	40	60	100	РС	ос
24GET31	Universal Human Values	30	0	0	30	0	60	2	100	0	100	HS	ОТ
Practical /	Employability Enhancement							F	i. V				-
24ECL31	Digital Electronics Laboratory	0	0	30	0	0	30	1	60	40	100	РС	
24ECL32	Electronic Devices Laboratory	0	0	30	0	0	30	1	60	40	100	РС	
24GEP31	Mini Project - I	0	0	30	0	0	30	1	100	0	100	EC	-
9	Total Credits to be e	earne	d					22		•			-

CI – Classroom Instructions, LI – Laboratory Instructions, TW – Term Work, SL – Self Learning, L – Lecture, T – Tutorial, P – Practical, C – Credit, TH – Total Hours, CA – Continuous Assessment, ESE – End Semester Examination.

Type: A - Analytical, D - Design using Hardware, S - Simulation using Coding, C - Concept, OC - Online course, OT - others

Signature of the Chairman

Board of Studies - ECF

		(Common to all Engine	ering and Tech	nnology Brand	hes)					
Programme Branch		All B.E/B.Tech Branches	Sem	Category	L	Т	Р	SL*	Total	Credi
Prerequisit	tes	Nil	1	HS	45	0	0	45	90	3
Preamble		s course is designed to enhance the co various workplace communication and			al apti	ude i	n Eng	lish la	nguage i	required
Unit – I		ammar, Verbal Aptitude, Listening, S Speech – Articles – Determiners –								9
Building a Po Unit – II Grammar: T Prefixes and Asking Ques Strategies: A	Gray ypes of Suffixed tions – n Exce	g: Importance of Good Communication Attitude: An Excerpt from You Can Windermar, Verbal Aptitude, Listening, Soff Sentences – Assertive, Interrogative is – Collocations – Idiomatic Expression Role Play – Reading: Reading for Corpt from You Can Win-Writing: Description	<ul> <li>Writing: Empeaking, Read Imperative and Emperative an</li></ul>	nail Etiquette - ding & Writin and Exclamato : Identifying r - Verbal and	– Emai g ory – C nain a d Non-	Uuest nd Se Verba	ing – ion T econd	Respo ags- V ary Po mmunic	/erbal A ints – Sp	Emails 9 ptitude peaking Winning
Unit – III Grammar: To from a Disconding: Narra Unit – IV Grammar: P Sentence Correct	Graenses cussion—Sc ative an Graenmelsi annels Graenmels Graenmels Graenmels Graenmels	ermission and Inviting Chief Guest ammar, Verbal Aptitude, Listening, S.— Phrasal Verbs— Verbal Aptitude: Jun — Speaking: Retelling an Incider anning - Motivating Yourself and Other and Compare & Contrast ammar, Verbal Aptitude, Listening, Stions — Transitional Words/Phrases — on — Listening: Listening for Specific of communication — Building Positive ammar, Verbal Aptitude, Listening, Sammar, Verbal Aptitude, Listening, S	peaking, Read mbled Senten nt — Discuss is Every Day: peaking, Read Discourse Mais Information — Self-Esteem as peaking, Read	ding & Writin lices – Senten sing Tourist An Excerpt fr ding & Writin arkers – Verl – Speaking: and Image: And	ice For Destin Com You Ig Bal Ap Small In Exce	matic ations ou Ca otitud Talk erpt fr	e: Oi  Teleom Y	istenir Readi n – Wr ne Wo phonic	ng: Takir ng: Pro iting: Pro ord Subs c Conver n Win –	9 ng Note ocess of aragrap 9 titution reations Writing
Unit – III  Grammar: To from a Disc Communicati Writing: Narra Unit – IV  Grammar: P Sentence Co Reading: Ch Instructions – Unit – V  Grammar: S – Cloze Test Speaking: A Excerpt from Specific Voca	Graenses cussion cussion Scative an Preposi pmpleti annels Recon Gra ubject t using greein you abulary	ermission and Inviting Chief Guest ammar, Verbal Aptitude, Listening, S.— Phrasal Verbs— Verbal Aptitude: Jun — Speaking: Retelling an Incider anning - Motivating Yourself and Other and Compare & Contrast ammar, Verbal Aptitude, Listening, Stions — Transitional Words/Phrases — on — Listening: Listening for Specific of communication — Building Positive ammar, Verbal Aptitude, Listening, Sommar, Verbal Aptitude, Listening, S	peaking, Reambled Sentent — Discusses Every Day:  peaking, Reambled Sentential Piscourse Mais Information — Self-Esteem and Peaking, Reambled Self-Esteem and Peaking, Reambled Self-Esteeming — Reading to the Peaking of the Peaking	ding & Writin ices – Senten sing Tourist An Excerpt fr ding & Writin arkers – Verl – Speaking: and Image: And ding & Writin Aptitude: Hore Listening and to Summarize	ng Destination Young Small n Exceeding The Small nonymark Iden in Exceeding The Section 1981 and 1981	matic ations ou Ca otitud Talk rpt fr	e: Oi Tele om Y	istenir Readi n – Wr ne Wo phonic ou Cal nones a	ng: Takir ng: Pro iting: Pro ord Subs c Conver n Win –	9 ng Note ocess of aragraph 9 titution reations Writing 9 nograph cription
Unit – III  Grammar: To from a Disc Communicati Writing: Narra Unit – IV  Grammar: P Sentence Co Reading: Ch Instructions – Unit – V  Grammar: S – Cloze Test Speaking: A Excerpt from Specific Voca TEXT BOOK	Grannels - Recon - Recon - Grannels - Recon - Grannels - Recon - Grannels - Union - Grannels - Recon - Grannels - Grannel	ermission and Inviting Chief Guest ammar, Verbal Aptitude, Listening, S — Phrasal Verbs— Verbal Aptitude: Jun — Speaking: Retelling an Incide anning - Motivating Yourself and Other and Compare & Contrast ammar, Verbal Aptitude, Listening, Stions — Transitional Words/Phrases — on — Listening: Listening for Specific of communication — Building Positive ammar, Verbal Aptitude, Listening, Storm Agreement — Gerunds and Infinitive Forms, Prepositions and Articles and Disagreeing — Reading: Skimmir Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English For Technical Can Win — Writing: Identity A Pan	peaking, Reacmbled Sentent — Discuss s Every Day:  peaking, Reac Discourse Mail Information Self-Esteem a peaking, Reacyes—Verbal As—Listening:  ng — Reading 1 tifying Trends	ding & Writing Ices – Sentending Tourist An Excerpt from	ice For Destin Tom Young Small In Exceeding Identification of the International Identification of Iden	maticn ation: bu Ca btitud Talk Talk rpt fr	e: Or Y	istenir Readi n – Wr ne Wo phonic ou Car nones a ts from chievin Expres	ng: Takir ng: Pro iting: Pa ord Subs c Conver n Win –	9 ng Notes ocess of aragraph  9 titution reations Writing  9 nograph cription - ioals: Ai h Graph
Unit - III Grammar: To from a Disc Communicati Writing: Narra Unit - IV Grammar: P Sentence Co Reading: Ch Instructions - Unit - V Grammar: S - Cloze Test Speaking: A Excerpt from Specific Voca TEXT BOOK  1. Sudh Delhi	Graenses cussion—Scative an Graenses preposion—letinannels Recon Graubject tusing greeing You abulary customarshar i, 2016	ermission and Inviting Chief Guest ammar, Verbal Aptitude, Listening, S — Phrasal Verbs— Verbal Aptitude: Jun — Speaking: Retelling an Incide anning - Motivating Yourself and Other and Compare & Contrast ammar, Verbal Aptitude, Listening, Stions — Transitional Words/Phrases — on — Listening: Listening for Specific of communication — Building Positive ammar, Verbal Aptitude, Listening, Storm Agreement — Gerunds and Infinitive Forms, Prepositions and Articles and Disagreeing — Reading: Skimmir Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English For Technical Can Win — Writing: Identity A Pan	peaking, Reacmbled Sentent — Discuss s Every Day:  peaking, Reac Discourse Mail Information Self-Esteem a peaking, Reacyes—Verbal As—Listening:  ng — Reading 1 tifying Trends	ding & Writing Ices – Sentending Tourist An Excerpt from	ice For Destin Tom Young Small In Exceeding Identification of the International Identification of Iden	maticn ation: bu Ca btitud Talk Talk rpt fr	e: Or Y	istenir Readi n – Wr ne Wo phonic ou Car nones a ts from chievin Expres	ng: Takir ng: Pro iting: Pa ord Subs c Conver n Win –	9 ng Note ocess of aragraph  9 titution reations Writing  9 nograph cription ocals: Ath Graph
Unit – III  Grammar: To from a Disc Communicati Writing: Narra Unit – IV  Grammar: P Sentence Co Reading: Ch Instructions – Unit – V  Grammar: S – Cloze Test Speaking: A Excerpt from Specific Voca TEXT BOOK  1. Sudh Delhi	Graenses cussion cussion Graenses Graen	ermission and Inviting Chief Guest ammar, Verbal Aptitude, Listening, S — Phrasal Verbs— Verbal Aptitude: Jun — Speaking: Retelling an Incide anning - Motivating Yourself and Other and Compare & Contrast ammar, Verbal Aptitude, Listening, Stions — Transitional Words/Phrases — on — Listening: Listening for Specific of communication — Building Positive ammar, Verbal Aptitude, Listening, Storm Agreement — Gerunds and Infinitive Forms, Prepositions and Articles and Disagreeing — Reading: Skimmir Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English for Technical Can Win — Writing: Identity A Pand Savitha C, English For Technical Can Win — Writing: Identity A Pan	peaking, Reading Sentent — Discusses Every Day:  peaking, Reading Discourse Mais: Information — Self-Esteem as peaking, Reading, Reading Reading — Reading to tifying Trends	ding & Writing Ices – Sentending Tourist An Excerpt from	ice For Desting of Small on Exceeding of Identity of I	matic ation: bu Ca btitud Talk Talk rpt fr s, Ho tifying araphs	e: Or Yes and Arand Aran	istenir Readi n – Wr ne Wo phonic ou Car nones a ts from chievin Expres	ng: Takir ng: Pro iting: Pa ord Subs c Conver n Win –	9 ng Note ocess of aragraph  9 titution reations Writing  9 nograph cription doals: Ai th Graph ss, New
Unit – III  Grammar: To from a Disc Communicati Writing: Narra Unit – IV  Grammar: P Sentence Co Reading: Ch Instructions – Unit – V  Grammar: S – Cloze Test Speaking: A Excerpt from Specific Voca TEXT BOOK  1. Sudh Delhi  REFERENCE  1. Ashra 2 S. P.	Graenses cussion—Scative an Graenses preposion—Heron Graenses Grae	ermission and Inviting Chief Guest ammar, Verbal Aptitude, Listening, S.— Phrasal Verbs— Verbal Aptitude: Jun — Speaking: Retelling an Incider anning - Motivating Yourself and Other and Compare & Contrast ammar, Verbal Aptitude, Listening, S. Listening: Listening for Specific of communication — Building Positive ammar, Verbal Aptitude, Listening For Specific of communication — Building Positive ammar, Verbal Aptitude, Listening, S. Verb Agreement — Gerunds and Infinitive Verb Forms, Prepositions and Articles and Disagreeing — Reading: Skimmin Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity and N P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C, English for Technical Can Win — Writing: Transcoding: Identity A P and Savitha C and Win — Writing: Transcoding: Identity A P and Savitha C and Win — Writing: Identity A P and Savitha C and Win — Writing: Identity A P and Savitha C and Win — Writing: Identity A P and Savit	peaking, Readmbled Sentent — Discusses Every Day:  peaking, Read Discourse Mail Information Self-Esteem and Peaking, Readwes— Verbal As — Listening:  ng — Reading to tifying Trends  pinded Edition, Mc	ding & Writin ices – Senten sing Tourist An Excerpt fr ding & Writin arkers – Verl – Speaking: and Image: An ding & Writin Aptitude: Hore Listening an to Summarize and Patterns ication, 2nd Eco	ng Desting Desting Parameter Small In Excession Grant	maticons ations ou Ca bititud Talk rpt fr s, Ho s, Ho catifying araphs	e: Or Person of Action of	istenir Readi n – Wr ne Wo phonic ou Car nones ts from chievin Expres	ng: Takir ng: Pro iting: Pro ord Subs c Conver n Win – and Hom n a Desc g your G ssing wit	9 ng Note ocess of aragrap  9 titution sations Writing  nograph cription doals: A th Grap

<sup>\*</sup> includes Term Work (TW) & Assignments, Tutorials and Case Studies

	SE OUTCOMES: mpletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	learn and use various aspects of English vocabulary to perform well in verbal aptitude tests of different types	Applying (K3)
CO2	listen and understand different spoken discourses	Applying (K3)
CO3	present ideas clearly and confidently in formal and informal conversations and discussions	Creating (K6)
CO4	comprehend the given text and respond appropriately for technical and professional purposes	Understanding (K2)
CO5	select appropriate words , phrases and grammatical units and apply them in both spoken and written communication	Analyzing (K4)

COs/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PS01	PSO2
CO1						1.		1	3	1	.1		
CO2			= ,		-	i i		1	3		1		- 7
CO3								2	3	1	2		
CO4						1			3	1	2		
CO5					. =1				3		2		

1 – Slight, 2 – Moderate, 3 – Substantial, BT- Bloom's Taxonomy

#### ASSESSMENT PATTERN - THEORY

Test / Bloom's Category*	Remembering (K1) %	Understa nding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1	-	35	50	=	-	15	100
CAT2		45	35	· - 1	y ee 🛌	20	100
CAT3	-	30	35	35			100
ESE	-	20	40	20	-	20	100

\* ±3% may be varied (CAT 1,2& 3 – 50 marks & ESE – 100 marks)

Signature of the Chairman Board of Studies - Sr H (English)



1	(Common to all Engi	neering and T	echnology l	orano	ches	)			
Programme & Branch	All B.E/B.Tech Branches	Sem.	Category	L	Т	Р	SL*	Total	Credit
Prerequisites	Nil	1.	BS	45	7	16	52	120	4
Preamble	To provide the skills to the stude and ordinary differential equation	lents for solving	g different re	al tim	ne pr	oblen	ns by a	applying	matrices
Unit – I	Matrices:	C There	Jakob Fer Si	. 170			9	Tell ?	9
and Eigen vector matrices – Ortho	naracteristic equation – Eigen valuors (without proof) – Cayley – Ha gonal transformation of a symmet on of quadratic form to canonical f	amilton theorer tric matrix to dia	m (Statemen agonal form -	t and Qua	d app adrat	olicati	ions or	nly) - Or	thogona
Unit – II	Ordinary Differential Equation				9				9
Introduction – Se	olution of First order differential ed	quations: Exac	t differential	equat	tions	– Le	ibnitz's	Linear I	Equation
Unit – III	ation – Clairaut's equation - Appli Ordinary Differential Equation			wth a	nd d	ecay			
	l equations of second and higher			ents -	Par	ticula	r Inten	rale for th	9
eax - cosax /	$\sin ax - x^n - e^{ax}x^n$ , $e^{ax}\sin bx$ and $e^{ax}\cos ax$	eax cosbx – Diff	erential Equa	ations	s with	h vari	able co	pefficient	s: Euler-
Cauchy's equati	on – Legendre's equation.	, , , , , , , , , , , , , , , , , , ,		1.					
Unit – IV	Applications of Ordinary Diffe							k	9
Method of varia	ation of parameters – Simultan differential equations: Simple h	eous first ord	er linear eq	uatio	ns \	with (	consta	nt coeffi	cients –
associated cond	itions need to be given).	iarmonic mond	on – ⊏iecuio	CITO	uits	(וווט	erentia	ıı equatio	ons and
Unit – V	Laplace Transform:				-			-	9
Introduction - Co	onditions for existence - Laplace t	transform of ele	mentary fun	at: a =					
and integrals of			silicitially full	Cuon	s – E	Basic	proper	ties – De	rivatives
and integrals of t	ransforms – Transform of periodic	c functions - Inv	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fu	nctions – Partial fraction method	c functions - Inv	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fu	ransforms – Transform of periodic nctions – Partial fraction method th constant coefficients.	c functions - Inv	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fu second order wi	nctions – Partial fraction method	c functions - Inv	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fu second order with LIST OF EXPER	nctions – Partial fraction method th constant coefficients.	c functions - Inv	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.	c functions - Inv – Convolution	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
LIST OF EXPER  1. Introduct  2. Compute	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES:  ction to MATLAB	c functions - Inv - Convolution  /ectors	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
LIST OF EXPER  1. Introduct 2. Comput  3. Solving	nctions – Partial fraction method the constant coefficients.  RIMENTS / EXERCISES: etion to MATLAB the transfer of eigen values and eigen values eigen values and eigen values eigen eigen values eigen eig	c functions - Inv - Convolution  // Convolution  // Convolution	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
LIST OF EXPER  1. Introduct 2. Compute 3. Solving 4. Solving	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: etion to MATLAB that and eigen values and eigen values order ordinary differential equations.	c functions - Inv - Convolution  /ectors  uations equations	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: etion to MATLAB ration of eigen values and eigen values order ordinary differential equipment order ordinary differential	c functions - Inv - Convolution  // ectors  uations  equations	erse Laplace	e tran	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: ction to MATLAB ration of eigen values and eigen values order ordinary differential equipment of Simultaneous first order ODE	rectors uations equations s f parameters	rerse Laplace Theorem – A	e tran Applio	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: ction to MATLAB ration of eigen values and eigen values and eigen values order ordinary differential equipment of Simultaneous first order ODE second order ODE by variation or	rectors uations equations s f parameters e transform of	verse Laplace Theorem – /	e tran Applio	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fusecond order will  LIST OF EXPER  1. Introduct 2. Compute 3. Solving 4. Solving 5. Solution 6. Solving 7. Determ 8. Solution	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: Etion to MATLAB Lation of eigen values and eigen values and eigen values of eigen values of eigen values of eigen values and eigen values of eigen va	rectors uations equations s f parameters e transform of	verse Laplace Theorem – /	e tran Applio	sfor	m: Inv	verse L	aplace tr	ansform
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: etion to MATLAB ration of eigen values and eigen values of eigen values and eigen values of eigen order ordinary differential equipment of Simultaneous first order ODE second order ODE by variation of eigen of Second order ODE by employed of Second order ODE by employed of Second order ODE by employed or entry	c functions - Inv - Convolution  /ectors  uations equations s of parameters e transform of lying Laplace transform	verse Laplace Theorem – /	ns	esfori	m: Inv	verse L olution	aplace tr of linear	ansform ODE of
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: Etion to MATLAB Lation of eigen values and eigen values and eigen values of eigen values of eigen values of eigen values and eigen values of eigen va	c functions - Inv - Convolution  //ectors  uations equations s of parameters e transform of lying Laplace transform  avathy K., "En	verse Laplace Theorem – /	ns	esfori	m: Inv	verse L olution	aplace tr of linear	ansform ODE of
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: etion to MATLAB ration of eigen values and eigen values of eigen values and eigen values of eigen order ordinary differential equipment of Simultaneous first order ODE second order ODE by variation of eigen values and inverse Laplace of Second order ODE by employed amy P., Thilagavathy K. and Gun	c functions - Inv - Convolution  //ectors  uations equations s of parameters e transform of lying Laplace transform  avathy K., "En	verse Laplace Theorem – /	ns	esfori	m: Inv	verse L olution	aplace tr of linear	ansform ODE of
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of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: etion to MATLAB ration of eigen values and eigen values of eigen values and eigen values of eigen order ordinary differential equipment of Simultaneous first order ODE second order ODE by variation of eigen values and inverse Laplace of Second order ODE by employed amy P., Thilagavathy K. and Gun Edition 2016, S.Chand and Co., I	rectors uations equations s f parameters e transform of l ying Laplace transform of l avathy K., "En New Delhi.	basic function ansforms gineering Ma	ns Willem	natic:	m: Inv	First Y	ear B.E/	B.Tech",
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: Etion to MATLAB sation of eigen values and eigen values and eigen values of eigen val	rectors  uations equations s of parameters e transform of lying Laplace transform enautics ", 10th ematics ", 10th ematics ", 1st Ed Prakash K. a	basic function ansforms  Edition, Joh	n Wil	natic:	m: Inv ns: S s For New I	First Y	ear B.E/	B.Tech",
of elementary fusecond order with second order w	nctions – Partial fraction method th constant coefficients.  RIMENTS / EXERCISES: etion to MATLAB ration of eigen values and eigen values of eigen values and eigen values of eigen of simultaneous first order ODE second order ODE by variation of eigen and inverse Laplace of Second order ODE by employ of Second order ODE by employ any P., Thilagavathy K. and Gun Edition 2016, S.Chand and Co., Interest of eigen and inverse Eigen, "Advanced Engineering Mather eigen," Higher Engineering Mather eigen, Vengataasalam S., Arun	rectors uations equations s of parameters e transform of l ying Laplace tra lavathy K., "En New Delhi.  mematics", 10th ematics", 1st Ed Prakash K. a lelhi, 2018.	basic function ansforms  Edition, Joh lition, Tata M and Suresh M	n Will cGra	natic: ey, N	m: Inv ns: S s For New [	First Y Delhi, I	ear B.E/ndia, 201	B.Tech",  6.  ny  - I", 2 <sup>nd</sup>

<sup>\*</sup>includes Term Work (TW) & Online / Certification course hours

	SE OUTCOMES: expletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	Use the matrix algebra methods and MATLAB for solving practical problems.	Applying (K3) Manipulation (S2)
CO2	Identify the appropriate method for solving first order ordinary differential equations.	Applying (K3) Manipulation (S2)
CO3	Solve higher order linear differential equations with constant and variable coefficients.	Applying (K3) Manipulation (S2)
CO4	Apply the concept of ordinary differential equations for modeling and finding solutions to engineering problems.	Applying (K3) Manipulation (S2)
CO5	Apply Laplace Transform to solve complex engineering problems.	Applying (K3) Manipulation (S2)

Mapping	of C	COs	with	<b>POs</b>	and	<b>PSOs</b>
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COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	3	2	1	3			1 1 1/10				-j .	
CO2	3	3	2		3	200	arts in vi	Mark Carlo		A 95		1 _ Al	14
CO3	3	3	2		3		- T	F E = 2	= < 1 =				
CO4	3	3	2		3				, =	T = = = =	I =	. 1-	
CO5	3	3	3		3								

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

ASSESSMEN	TDATT	EDN _ T	HEUDY
ASSESSIVIEN	IPALL		HEUK I

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1		40	60				100
CAT2		40	60	gereich geit	i amerikan	1 - 1	100
CAT3		30	70				100
ESE		30	70			1	100

\* ±3% may be varied (CAT 1, 2 & 3 – 50 marks & ESE – 100 marks)

Signature of the Chairman Board of Studies - \$4 H



	(Common to EEE, EIE, ECE, CSE, C	CSD, IT, AIDS	& AIML bra	nches	s)				·
Programme & Branch	B.E - EEE, EIE, ECE, CSE, CSD, B.Tech - IT, AIDS & AIML branches	Sem.#	Category	L	т	Р	SL*	Total	Credit
Prerequisites	Nil	1/2	BS	45	0	0 .	45	90	3
Preamble	This course aims to emphasize the engineering storage devices, organic electronic materials, far management. It aims to impart the fundament societal applications.	abrication of F	CBs, insulat	ing m	ateri	als a	nd the	need for	e-waste
Unit – I	WATER TECHNOLOGY						×	- !	9
hardness of wate disadvantages of carbonate and cal <b>Unit – II</b> Batteries: Introdu	es of water - hardness of water- expression of harder by EDTA method – determination of alkalini using hard water in industry: scale, sludge and begon conditioning - External treatment method - delection - discharging and charging of battery - chardary battery: Ni-Cd battery -modern battery: lithiu	ity - DO, BO poiler corrosio mineralization racteristics of	D and COE n - softening process and battery - type	of water	finitionater: rse of	on a Inter osmo	nd Sig rnal tre osis. – prim	nificance atment p	only) process
Cells: Introduction	n - Importance and classification of fuel cells - des	scription, princ	iple, compor	ents	and				
	ric acid fuel cell and direct methanol fuel cell - com	parison of ba	tteries with fu	iel ce	lls.			_ 1	
Unit – III	ORGANIC ELECTRONIC MATERIALS  nic Materials: Introduction – types of organic ser								9
	naterials – organic light emitting diodes – constru	uction and wo	orking mecha	anism	- cc	ompa	arison o	of LCD v	s OLED
	naterials – organic light emitting diodes – construction – electroplating (copper) process -  INSULATING MATERIALS	uction and wo	orking mecha	anism	- cc	ompa	arison o	of LCD varcuit boar	s OLED
Fabrication of PC fabrication.  Unit – IV  Introduction - requestration in the community of	B: Introduction – electroplating (copper) process -  INSULATING MATERIALS  uirements - classification (solid, liquid & gas) - pre - solid organic insulator: epoxy resin - liquid insu g electrical resistivity of materials - composition, pre	electroless p eparation, projulator: transfo	orking mechalating (nickel perties and a primer oil - ga	pplica	etion	ompa – pri s of :	nted ci	of LCD vercuit boar organic i	s OLED rd (PCB  9 nsulator sistivity
Fabrication of PC fabrication.  Unit – IV  Introduction - requestion materials factors influencing	B: Introduction – electroplating (copper) process -  INSULATING MATERIALS  uirements - classification (solid, liquid & gas) - pre - solid organic insulator: epoxy resin - liquid insu g electrical resistivity of materials - composition, pre	electroless p eparation, projulator: transfo	orking mechalating (nickel perties and a primer oil - ga	pplica	etion	ompa – pri s of :	nted ci	of LCD varcuit board organic i ctrical reserials: Nice	s OLED rd (PCB  9 nsulator sistivity
Fabrication of PC fabrication.  Unit – IV  Introduction - requesteramic materials factors influencing polymers as elect Unit – V  Introduction - E- V human health - newaste (magnetics)	B: Introduction – electroplating (copper) process -  INSULATING MATERIALS  uirements - classification (solid, liquid & gas) - pre - solid organic insulator: epoxy resin - liquid insulator: electrical resistivity of materials - composition, proceed insulator.	electroless peparation, propulator: transform and a substances in techniques in techni	perties and a perties are oil - gas applications of the control of the	anism ) proc applicate instance in the process instance in the process instance in the process i	ational ationa	s of s r: SF istivit	solid in  solid in  solid in  set energy  aste on  emistry  ess) - d	organic in ctrical reservises. Nice	s OLED rd (PCB  9 nsulator sistivity chrome  9 nent and ing of e
Fabrication of PC fabrication.  Unit – IV  Introduction - requester materials factors influencing polymers as elect Unit – V  Introduction - E- V human health - new waste (magnetics)	B: Introduction – electroplating (copper) process -  INSULATING MATERIALS  uirements - classification (solid, liquid & gas) - presidence of electrical resistivity of materials - composition, presidence insulator.  E-WASTE AND ITS MANAGEMENT  Waste definition - sources of e-waste — hazardous electroped for e-waste management - waste minimization separation, eddy current, density separation - recomposition, eddy current, density separation - recomposition - re	electroless peparation, propulator: transform and a substances in techniques in techni	perties and a perties are oil - gas applications of the control of the	anism ) proc applicate instance in the process instance in the process instance in the process i	ational ationa	s of s r: SF istivit	solid in  solid in  solid in  set energy  aste on  emistry  ess) - d	organic in ctrical reservises. Nice	s OLED  9  nsulator sistivity chrome  9  nent and ing of e
Fabrication of PC fabrication.  Unit – IV  Introduction - requestration influencing polymers as elected.  Unit – V  Introduction - E- V  human health - newaste (magnetic semethods of e- was methods of e- was methods.)  TEXT BOOK:  1. Roussak 2013, for	B: Introduction – electroplating (copper) process -  INSULATING MATERIALS  uirements - classification (solid, liquid & gas) - pre - solid organic insulator: epoxy resin - liquid insu- g electrical resistivity of materials - composition, pre- rical insulator.  E-WASTE AND ITS MANAGEMENT  Vaste definition - sources of e-waste – hazardous- ed for e-waste management - waste minimization- separation, eddy current, density separation - reco- ste - Incineration, pyrolysis, land fill - global scenar  , O.V. Gesser, H. D. " Applied Chemistry: A Te- Unit I, II.	electroless peparation, propulator: transform operties and a substances in techniques	perties and a perties are of a perties and a perties and a perties and a perties are of	anism ) prod applicate inside the second indicate in the second in the s	- ccess ation: ation: res s of aste - aing p - cas	ompa pri s of : s of : SF istivit	solid in sol	organic in ctrical reservironn of recyclisposal tr	s OLED rd (PCB  9  nsulator sistivity chrome  9  nent and ing of e reatmen
Fabrication of PC fabrication.  Unit – IV  Introduction - requestration influencing polymers as elected.  Unit – V  Introduction - E- V  human health - newaste (magnetic smethods of e- was methods of e- was methods.)  TEXT BOOK:  1. Roussak 2013, for Palanisan	B: Introduction – electroplating (copper) process -  INSULATING MATERIALS  uirements - classification (solid, liquid & gas) - preserved solid organic insulator: epoxy resin - liquid insulator electrical resistivity of materials - composition, preserved insulator.  E-WASTE AND ITS MANAGEMENT  Waste definition - sources of e-waste – hazardous electroped for e-waste management - waste minimization electroped for e-waste management - waste minimization electroped for e-waste management - generation - recorded for e-waste management, density separation - recorded electroped for e-waste management, density separation - recorded electroped for e-waste management - waste minimization electroped for e-waste minimization electroped for e-waste minimization electroped for e-waste minimization electroped for e-waste minimization electro	electroless perparation, propulator: transform operties and a substances in techniques in techniques in the control of e-waste extbook for Electrol of	perties and a perties are of a perties and a perties and a perties and a perties are of	anism ) prod applicate inside the second indicate in the second in the s	- ccess ation: ation: res s of aste - aing p - cas	ompa pri s of : s of : SF istivit	solid in sol	organic in ctrical reservironn of recyclisposal tr	s OLED rd (PCB  9  nsulator sistivity chrome  9  nent and ing of e reatmen
Fabrication of PC fabrication.  Unit – IV  Introduction - requestration in the polymers as elected.  Unit – V  Introduction - E- V  Introduction - E- V  human health - newaste (magnetic smethods of e- was methods of e- was methods of e- was methods.  1. Roussak 2013, for Palanisan Edition, P	B: Introduction – electroplating (copper) process -  INSULATING MATERIALS  uirements - classification (solid, liquid & gas) - pre - solid organic insulator: epoxy resin - liquid insulator: g electrical resistivity of materials - composition, pre rical insulator.  E-WASTE AND ITS MANAGEMENT  Waste definition - sources of e-waste – hazardoused for e-waste management - waste minimization separation, eddy current, density separation - recorded to the composition of the	electroless perparation, propulator: transform operties and a substances in techniques in techniques in the control of e-waste extbook for Electrol of	perties and a perties are of a perties and a perties and a perties and a perties are of	anism ) prod applicate inside the second indicate in the second in the s	- ccess ation: ation: res s of aste - aing p - cas	ompa pri s of : s of : SF istivit	solid in sol	organic in ctrical reservironn of recyclisposal tr	s OLED rd (PCB g nsulator sistivity chrome g nent and ing of e reatmen
Fabrication of PC fabrication.  Unit – IV  Introduction - requestration in the second content of the second co	B: Introduction – electroplating (copper) process -  INSULATING MATERIALS  uirements - classification (solid, liquid & gas) - pre - solid organic insulator: epoxy resin - liquid insulator: g electrical resistivity of materials - composition, pre rical insulator.  E-WASTE AND ITS MANAGEMENT  Waste definition - sources of e-waste – hazardoused for e-waste management - waste minimization separation, eddy current, density separation - recorded to the composition of the	electroless peparation, propulator: transformer and a substances in techniques in techniques for e-waste extbook for Electroless and K., Kows V, V.	perties and a pe	effect leach leach leach lodia	- ccess ation: ulato res s of aste - cas	ompa  — pri  ss of : r: SF  e-wa  — che  poroce  e stu  ogists	solid in sol	organic in ctrical reservironn of recyclisposal tr	s OLEC rd (PCE  9  nsulato sistivity chrome  9  nent an ing of e reatmer

\*includes Term Work(TW) & Online / Certification course hours

# 1st sem for EEE, EIE, ECE & 2nd sem for CSE, CSD, IT, AIDS & AIML

A. A. A. A. A. A.	SE OUTCOMES: mpletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	analyze the water quality parameters for suitability of industrial and domestic applications.	Analysing (K4)
CO2	examine the chemistry of energy storing devices and meeting the future prospectus of energy storage.	Analysing (K4)
CO3	simplify the working mechanism of organic electronic materials and apply the concept of plating techniques in PCBs fabrication.	Analysing (K4)
CO4	identify the suitable insulating materials for industrial applications.	Analysing (K4)
CO5	categorize the e-waste and reduce its impacts on future environment.	Analysing (K4)

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	2	1		1					1.		
CO2	3	2	1	1									- 4
CO3	3	2	1	1	v Ti							r	
CO4	3	2	1	1		~	· ·	3					
. CO5	3	2	3	1		2	17			4	-		

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

#### **ASSESSMENT PATTERN - THEORY**

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6)	Total
CAT1		40	50	10			100
CAT2	P	40	50	10			100
CAT3		40	50	10		_ x	100
ESE	, I	40	50	10	×		100

\* ±3% may be varied (CAT 1, 2 & 3 – 50 marks & ESE – 100 marks)

Signature of the Chairman

Board of Studies - らんり

Programme & Branch	All BE/BTech Engineering & Technology branches, except CSE, IT,CSD, Al&ML, Al&DS	Sem	Category	L	т	P	SL*	Total	Credit
Prerequisites	Nil	1	ES	45	0	30	45	120	4
Preamble	The course is designed for use by free deals with the techniques needed to p solve problems and the ways the confocuses on developing programming sk	ractice of mputers	computationa can be use	I thinked to s	ing,	the a	art of u	sing con	nputers t
Unit – I	Introduction to Computer and Proble					- 1	W		9
	omputers: Types, Generations, Charact orithms - Flowcharts – Pseudo codes -								
Unit – II	Introduction to C and Control Statem		7.9 10 37 12 3	100		23.5	THE SH		9
identifiers- Basic looping stateme Unit – III	a C program – Compiling and executing data Types – Variables – constants – Ints  Arrays and Functions:	nput / C	oram – C Tok Output statem	ens – ients –	Cha op	erato	er set in rs - de	n C — Ke cision ma	eywords aking an 9
	izing and accessing arrays – operations	on arr	ave - Two d	imenc	iono	larro	We one	thoir o	0.000
Functions: Intro	duction- Using functions, function declara nctions: basic data types and arrays – sto	tion and	definition - f	unctio	n ca	II – re			
Unit – IV	Strings and Pointers:		*						9
character maniparithmetic, point	ction – operations on strings : finding I oulation functions, Arrays of strings. Poi ers and 1D arrays , pointers and strings	nters: d							
Unit – V	User-defined Data Types and File Ha								9
unions - enume	ta types: Structure: Introduction – neste erated data type. File Handling: Introduct ng file position indicator : fseek(), ftell() an	ion - op	ening and cl						
LIST OF EXPE	RIMENTS / EXERCISES:								
1 Writing a	algorithms and drawing flowcharts using Finishers  n structures	Raptor T	ool for proble	ms inv	olvi	ng se	quentia	ıl, Select	ion and
	ns for demonstrating the use of different ty	pes of	format Specif	iers	-				
3. Program operator	ns for demonstrating the use of different ty	pes of c	perators like	arithm	etic	, logic	al, rela	itional ar	nd ternar
4. Program	ns for demonstrating using decision maki	ing state	ments	ž.		*		ч	
5. Program	ns for demonstrating using repetitive sta	tements	, e a						
6. Program	ns for demonstrating one-dimensional arra	ay		17,3				·	- <u>\</u>
7. Program	ns for demonstrating two-dimensional arra	ay			1	-		ie.	with process
8. Program	ns to demonstrate modular programming of	concepts	s using function	ons				=	
9. Program	ns to demonstrate strings (Using built-in a	nd user-	defined funct	ions)					
10. Program	is to illustrate the use of pointers	*				· ·			
11. Program	ns to illustrate the use of structures and ur	nions	162, 24. 51	in i		. 7			
		nions	harish vi	ini,		7	8 V		

<sup>\*</sup>includes Term Work(TW) & Online / Certification course hours

TEXT BO	OOK:						7 10 1			F V			
1.	Reema TI	nareja,	"Progra	mming i	n C ", 2	nd Editio	on, Oxfo	ord Unive	ersity Pr	ess, New	Delhi, 20	18	1
REFERE	NCES/ MA	ANUAL	/ SOFT	WARE:	ette 7	into.		6 (514			1,161	47.5	4-2-1
1.	Yashavar	t Kanet	tkar, "Le	et us C",	16th Ed	dition, B	PB Pub	lications	, 2018.			te, e se	
2.	Sumitabh	a Das, '	"Compu	ter Fund	damenta	als and	C Progr	amming	", 1st Ed	dition, Mc	Graw Hill,	2018.	
3.	Balagurus	samy E.	., "Progi	amming	in ANS	SI C", 7t	h Editio	n, McGra	aw Hill E	Education	, 2017.		- I
4.	Behrouz / C", 3 <sup>rd</sup> Ed				F.Gilbe	erg, "Co	mputer	Science	A Struc	ctured Pro	grammin	g Approac	ch Using
5.	https://ww	w.cpro	grammi	ng.com/	tutorial/	c-tutoria	ıl.html	1.	17.5	1,11			34.
	E OUTCOI		urse, th	e stude	nts wil	l be abl	e to					BT Ma (Highest	
CO1	apply pro							ons for t	he real v	world prob	olems.	Applyin Precisio	
CO2	develop s	simple (	C progra	ıms usir	ng appr	opriate l	ooping	and con	trol state	ements		Applyin Precisio	g (K3)
СОЗ	develop s	simple (	C progra	ms usir	g the co	oncepts	of array	s and m	nodular į	orogramm	ning	Applyin Precisio	
CO4	apply the	concep	ots of po	inters a	nd deve	elop C p	rograms	s using s	strings a	nd pointe	rs	Applyin Precisio	
CO5	make use	e of use	r-define	d data t	ypes an	d file co	ncepts	to solve	real wo	rld proble	ms	Applyin Precision	
		2 6		M	anning	of COs	with Po	Os and	PSOs		P 20		
COs/PC	s PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	1	1			n te a V	- 1,5%	1	1	1	5.7	
CO2	3	2	2	. 1					1	1	1		
CO3	3	2	2	1					1.	1	1		-
CO4	3	2	2	1					1	1	1		
CO5	3	2	2	1	1	. ,		, .	1	1	1		
1 – Sligh	nt, 2 – Mod	erate. 3	B – Subs	stantial.	BT- Blo	om's Ta	xonomy	·		1/4			

Signature of the Chairman
Board of Studies - CSE

CADEMIC CELL

P. Malaivam

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		24ECT11-CIRCUITS	1		-				/2	
Programm Branch	e &	B.E & Electronics and Communication Engineering	Sem.	Category	L	T	Р	SL*	Total	Credi
Prerequisi	tes	Nil	1	PC	45	0	0	45	90	3
Preamble		This course provides an insight on basic law	s and theor	ems to solve	e diffe	rent [	DC, A	C circu	its and r	networks
		and to expose the rudiments of the course wh	nich is esser	ntial for subse	equen	t cour	ses.			
Unit – I	3	DC Circuits and Steady State Analysis :						-14 - 1		9
Review of	Current	Electricity and basic Kirchoff's Laws- Star-Delta	a Transform	ation -Mesh	Analy	sis-N	odal /	Analysi	s - Supe	rposition
Theorem-T	hevenin	Theorem - Norton Theorem-Maximum Power To	ransfer Theo	orem-Recipro	city T	heore	em			
Unit – II		Introduction to Single Phase AC Circuits:	Les to						*	9
		ngular relations of Sine wave-Sine wave equa								
		ce and phasor diagram-Series, Parallel and Co	mpound circ	cuits-Instanta	neous	Pow	ver- A	verage	Power-A	Apparen
Power-Rea	ictive Po	wer-The Power Triangle – Power Factor								
Unit – III		Transient Analysis:					n			9
Introduction	n to Lan	_l lace Transforms-Initial value and Final value T	heorem-DC	response of	RI	RC a	nd RI	C Circ	uits – Si	nusoida
		d RC circuits.	noorom Do	rooponeo o	112,		110 111	-0 0110	dito of	nasorae
Unit – IV		Resonance:								9
Series Res	onance	Impedance and Phase Angle of a Series Reso	nant Circuit	-Voltages an	d Cur	rents	in a s	Series	Resonan	t Circuit
Bandwidth	of an F	Industrial Passes of the Industrial Passes of the Industrial Passes of the Industrial Passes of								
Bandwidth Circuit- Q-F	of an F	RLC circuit-Quality Factor(Q) and its Effect on Farallel Resonance.								a Tan
Bandwidth Circuit- Q-F	of an F	RLC circuit-Quality Factor(Q) and its Effect on								a Tan
Bandwidth Circuit- Q-F Unit – V Two-port	of an F Factor of Network	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh	Bandwidth-l	Parallel Reso	onanc	e-Res	sonan	t Frequ	uency for	a Tan
Bandwidth Circuit- Q-F Unit – V Two-port	of an F Factor of Network	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:	Bandwidth-l	Parallel Reso	onanc	e-Res	sonan	t Frequ	uency for	a Tan
Bandwidth Circuit- Q-F Unit – V Two-port	of an F Factor of Network	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh	Bandwidth-l	Parallel Reso	onanc	e-Res	sonan	t Frequ	uency for	a Tan
Bandwidth Circuit- Q-F Unit – V Two-port	of an F Factor of Network s-Hybrid	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh	Bandwidth-l	Parallel Reso	onanc	e-Res	sonan	t Frequ	uency for	a Tanl
Bandwidth Circuit- Q-F Unit – V Two-port Parameters	of an Fractor of  Network s-Hybrid  OK: Sudhaka	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh (H) Parameters-Lattice Network.  ar A. and Shyammohan S. Palli, "Circuits an	Bandwidth-l	Parallel Reso	(Y)	e-Res	meters	t Freques	mission	9 (ABCD
Bandwidth Circuit- Q-F Unit – V Two-port Parameters TEXT BOC	of an Fractor of Networks-Hybrid  DK: Sudhaka	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh (H) Parameters-Lattice Network.  ar A. and Shyammohan S. Palli, "Circuits and On, New Delhi, 2015	Bandwidth-I	Admittance  Analysis a	(Y)	e-Res	meters	t Freques	mission	9 (ABCD
Bandwidth Circuit- Q-F Unit – V Two-port Parameters TEXT BOC	of an Fractor of Networks-Hybrid  OK: Sudhaks Education	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh (H) Parameters-Lattice Network.  ar A. and Shyammohan S. Palli, "Circuits an	Bandwidth-I	Admittance  Analysis a	(Y)	e-Res	meters	t Freques	mission	9 (ABCC
Bandwidth Circuit- Q-F Unit – V Two-port Parameters  TEXT BOC  1.	of an Fractor of Network s-Hybrid  OK: Sudhak Educatio https://w	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh (H) Parameters-Lattice Network.  ar A. and Shyammohan S. Palli, "Circuits and on, New Delhi, 2015  www.mheducation.co.in/circuits-and-networks-97	Bandwidth-Inort-Circuit  d Networks	Admittance  Analysis ar	(Y)	Parar	meters	s-Trans	mission	9 (ABCD
Bandwidth Circuit- Q-F Unit – V Two-port Parameters  TEXT BOC  1.  REFEREN  1.	of an Factor of Network S-Hybrid  OK: Sudhak Educatio https://w  CES: Hayt W.	RLC circuit-Quality Factor(Q) and its Effect on Farallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh (H) Parameters-Lattice Network.  ar A. and Shyammohan S. Palli, "Circuits and on, New Delhi, 2015	Bandwidth-Inort-Circuit  d Networks 8933921960 ircuit Analys	Admittance  Analysis are the parallel Resolution Admittance	(Y) and Sy	Parar	meters	s-Trans	mission	9 (ABCE
Bandwidth Circuit- Q-F Unit – V Two-port Parameters  TEXT BOC  1.  REFEREN  1.	of an Factor of Network S-Hybrid  OK: Sudhak Educatio https://w  CES: Hayt W.	RLC circuit-Quality Factor(Q) and its Effect on Parallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh (H) Parameters-Lattice Network.  ar A. and Shyammohan S. Palli, "Circuits and on, New Delhi, 2015  www.mheducation.co.in/circuits-and-networks-97	Bandwidth-Inort-Circuit  d Networks 8933921960 ircuit Analys	Admittance  Analysis are the parallel Resolution Admittance	(Y) and Sy	Parar	meters	s-Trans	mission	9 (ABCD
Bandwidth Circuit- Q-F Unit – V Two-port Parameters  TEXT BOC  1.  REFEREN  1.	of an Factor of Networks-Hybrid  OK: Sudhaka Educatio https://w  CES: Hayt W.	RLC circuit-Quality Factor(Q) and its Effect on Farallel Resonance.  Two Port Network:  -Open-Circuit Impedance (Z) Parameters-Sh (H) Parameters-Lattice Network.  ar A. and Shyammohan S. Palli, "Circuits and on, New Delhi, 2015	Bandwidth-Inort-Circuit  d Networks 8933921960 ircuit Analys sis-9789390	Parallel Resolution Admittance  Analysis and D4-india D185139-india	(Y) and Sy on, Ta	Parar nthes	meters	s-Trans	mission	9 (ABCE

	E OUTCOMES: pletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	apply the knowledge of basic laws to find circuit parameters of DC circuits and Identify the phasor relations and power analysis of lumped elements	Applying (K3)
CO2	apply various network theorems and simplify the DC circuits.	Applying (K3)
CO3	apply various input signals and analyze the transient response of RL,RC and RLC circuits.	Applying (K3)
CO4	Solve series and parallel resonant circuits.	Applying (K3)
CO5	determine the various parameters of a two port network.	Applying (K3)

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	()								2	3	2
CO2	3	2			-						2	3	2
CO3	3	3	2								2	3	2
CO4	3	2									2	3	2
CO5	3	2	E1 -	1.5	rsc* - *					· 1	2	3	2

1 – Slight, 2 – Moderate, 3 – Substantial, BT- Bloom's Taxonomy

#### **ASSESSMENT PATTERN - THEORY**

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creati ng (K6) %	Total %
CAT1		30	70		2	Lande	100
CAT2	<u> </u>	30	70	V, ***			100
CAT3		25	75				100
ESE		25	75				100

\* ±3% may be varied (CAT 1,2,3 – 50 marks & ESE – 100 marks)

Signature of the Chairman Board of Studies - **ECE** 

		- HERITAGE OF						11k ( 1p!	
	(Common to All Eng	gineering and Tec	hnology Brar	nches	)		y == 1		1 - 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Programme & Branch	All B.E/B.Tech Branches	Sem.	Category	L	Т	Р	SL*	Total	Credit
Prerequisites	NIL	1	HS	15	0	0	15	30	
Preamble	The objective of this course is to impararts, heroic games, doctrines, contribu	rt knowledge abo	ut Tamil lang	uage,	liter	ature	, painting	gs, sculptu	ires, folk
UNIT I	Language and Literature	7							3
sangam literatu buddhism & jai	lies in india - dravidian languages – tami ure – distributive justice in sangam litera nism in tamil land - bakthi literature azh nil - contribution of bharathiyar and bhara	ature - managem wars and nayanr	ent principles	s in th	niruk	ural -	tamil ep	oics and in	mpact o
UNIT II	Heritage - Rock Art Paintings to Mo	dern Art – Sculp	ture					: e04	3
sculptures, villa	modern sculpture - bronze icons - tribes age deities, thiruvalluvar statue at kany aswaram - role of temples in social and e	akumari, making	of musical i	temp nstru	le ca	ar ma s - n	king nridhang	massive to am, parai	erracotta , veenai
UNIT III	Folk and Martial Arts	* ·	- 3					-	3
	karagattam - villu pattu - kaniyan kooth	ari e de la compania		- ,					
sports and gam	Thinai Concept of Tamils	n = 1 1	124 TS 1	5.95				1 75 69	3
UNIT IV  Flora and faun education and	Thinai Concept of Tamils  a of tamils & aham and puram concep literacy during sangam age - ancient cit	ot from tholkappiy ties and ports of	/am and san sangam age	gam l	litera	iture and ir	- aram c	concept of	tamils ·
unit iv  Flora and faun	Thinai Concept of Tamils  a of tamils & aham and puram concep literacy during sangam age - ancient cit	ties and ports of	sangam age	- exp	ort a	iture and ir	- aram c	concept of ring sanga	tamils -
UNIT IV  Flora and faun education and overseas conquents  UNIT V  Contribution of	Thinai Concept of Tamils  a of tamils & aham and puram concep literacy during sangam age - ancient cituest of cholas.	tional Movement	t and Indian e of tamils o	- exp	ire	and in	arts of in	concept of ring sanga andia – sel	tamils am age
UNIT IV  Flora and faun education and overseas conquent V  Contribution of movement - ro	Thinai Concept of Tamils  a of tamils & aham and puram concep literacy during sangam age - ancient cituest of cholas.  Contribution of Tamils to Indian Natatamils to indian freedom struggle - the	tional Movement	t and Indian e of tamils o	- exp	ire	and in	arts of in	concept of ring sanga andia – sel	tamils am age
UNIT IV  Flora and faund education and overseas conquitation of movement - robooks.  TEXT BOOK:	Thinai Concept of Tamils  a of tamils & aham and puram concep literacy during sangam age - ancient cituest of cholas.  Contribution of Tamils to Indian Natatamils to indian freedom struggle - the	tional Movement cultural influence stems of medicin	sangam age t and Indian e of tamils of the — inscription	- exp Cultu ver th	ire ne ot ma	her p	arts of in	concept of ring sanga ndia – sel int history	tamils am age am age affective for tamils
WNIT IV  Flora and faund education and overseas conquitaries  UNIT V  Contribution of movement - robooks.  TEXT BOOK:  1. S.Mu	Thinai Concept of Tamils  a of tamils & aham and puram concep literacy during sangam age - ancient cituest of cholas.  Contribution of Tamils to Indian Nata tamils to indian freedom struggle - the le of siddha medicine in indigenous systemathuramalingam, M.Saravanakumar, Heritatan description of Tamils to Indian Nata tamils to indian freedom struggle - the le of siddha medicine in indigenous systemathuramalingam, M.Saravanakumar, Heritatan description of Tamils to Indian Nata tamils	tional Movement cultural influence stems of medicin	sangam age t and Indian e of tamils of the — inscription	- exp Cultu ver th	ire ne ot ma	her p	arts of in	concept of ring sanga ndia – sel int history	tamils am age am age affective for tamils
WNIT IV  Flora and faund education and overseas conquitation of movement - robooks.  TEXT BOOK:  1. S.Mu  REFERENCES	Thinai Concept of Tamils  a of tamils & aham and puram concep literacy during sangam age - ancient cituest of cholas.  Contribution of Tamils to Indian Nata tamils to indian freedom struggle - the le of siddha medicine in indigenous systemathuramalingam, M.Saravanakumar, Heritatan description of Tamils to Indian Nata tamils to indian freedom struggle - the le of siddha medicine in indigenous systemathuramalingam, M.Saravanakumar, Heritatan description of Tamils to Indian Nata tamils	tional Movement cultural influence stems of medicin	t and Indian e of tamils one — inscription	Cultuver thons &	re ot ma	her p nuscr	arts of in ipts – pr	concept of ring sangarandia – sel rint history	f tamils am age of a frespect of tamil
Sports and game UNIT IV  Flora and faund education and overseas conquitaries of the contribution of the co	Thinai Concept of Tamils  a of tamils & aham and puram concept literacy during sangam age - ancient cituest of cholas.  Contribution of Tamils to Indian National States of Stat	tional Movement cultural influence stems of medicin itage of Tamils, Y	t and Indian e of tamils one — inscription es Dee Publi	Culturer thous &	Pvt	her p nuscr	arts of in ipts – pr	concept of ring sanga andia – sel int history  Units I,II,I	f tamils am age  3 f-respect of tami

<sup>\*</sup>includes Term Work(TW) & Online / Certification course hours

COUR	SE OUTCOMES:	BT Mapped
படிப்	பை முடித்தவுடன், மாணவர்கள்	(Highest Level)
CO1	explain valuable concepts in language and literature of tamils.	Understanding (K2)
CO2	illustrate about the tamils sculpture and their paintings.	Understanding (K2)
CO3	summarize about the tamils folk and martial arts.	Understanding (K2)
CO4	explain the thinai concept of tamils.	Understanding (K2)
CO5	explain the contribution of Tamils to the Indian National Movement and Indian culture.	Understanding (K2)

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	s. Fr		No.			2	3	2	2	y	3		
CO2	- 1 - 4					2	3	2	2		3		1 11
CO3						2	3	2	2		3		× ,
CO4						2 .	3	2	2		3		
CO5				2- T- F		2	3	2	2		3		- n - 1

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

#### ASSESSMENT PATTERN - THEORY

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6)	Total
CAT1	40	60	= = /	44.	v = e, = _ ==	-	100
CAT2	40	60	н — а				100
CAT3	40	60					100
ESE			1 .	NA	. ,	· · · · · · · · · · · · · · · · · · ·	

\*  $\pm 3\%$  may be varied (CAT 1, 2 & 3 – 50 marks )

Signature of the Chairman



	24TAM01-தமிழ	ுர் மரபு			1			my W	
	(Common to All Engineering and	d Technol	ogy Branches	)		-			3 1
Programme & Branch	All B.E/B.Tech Branches	Sem.	Category	L	T	Р	SL*	Total	Credit
Prerequisites	NIL	1	нѕ	15	0	0	15	30	1
Preamble	தமிழர்களின் மொழி, இலக்கியம், ஓவியங் விளையாட்டுக்கள், திணைக் கோட்பாடுகள், ழ பற்றிய அறிவை வழங்குவதே இந்த பாடத்தில்	இந்திய	பண்பாட்டிற			_		கலைகள பங்கள்	
<mark>அ</mark> லகு <i>-</i> ।	மொழி மற்றும் இலக்கியம்								3 2111
இலக்கியத்தி கருத்துக்கள் ஆழ்வார்கள் இலக்கிய வ	ழிக் குடும்பங்கள் - திராவிட மொழிகள் - தமிழ் ன் சமயச் சார்பற்ற தன்மை - சங்க இலக்கியத் - தமிழ் காப்பியங்கள், தமிழகத்தில் சமண மற்றும் நாயன்மார்கள் - சிற்றிலக்கியங்கள் ளர்ச்சியில் பாரதியார் மற்றும் பாரதிதாசன் ஆகி	த்தில் ப பௌத்த - தமிழீ யோரின்	கிர்தல் அற சமயங்கவ இல் நவீன பங்களிப்பு	)ம் - ளின் இல	திரு தாச் க்கிய	க்குர கம் பத்தி	றளில் - பச்	மேலான தி இல ளர்ச்சி -	ன்மைச் க்கியம் தமிழ்
அலகு - ॥	மரபு - பாறை ஓவியங்கள் முதல் நவீன ஓவி ல் நவீன சிற்பங்கள் வரை - ஐம்பொன் சிலை								3
குமரிமுனை தமிழர்களின் அலகு - III தெருக்கூத்து	பொருட்கள், பொம்மைகள் - தேர் செய்யும் கணையில் திருவள்ளுவர் சிலை - இசைக் கருவிகள் சமூக பொருளாதார வாழ்வில் கோவில்களின் நாட்டுப்புறக் கலைகள் மற்றும் வீர் விளையார், கரகாட்டம், வில்லுப்பாட்டு, கணியான் கூத்து	ா - மிரு பங்கு. ட்டுக்கள்	நதங்கம், ப ர	றை,	ഖ്ങ	<b>ळ</b> ा,	யாழ்,	நாதஸ்	வரம் 3
	ாட்டம், தமிழர்களின் விளையாட்டுகள்.			in the					
<b>அலகு</b> - IV	தமிழர்களின் திணைக் கோட்பாடுகள்			Fig. 3	-119	ď.			3
கோட்பாடுகள் சங்ககால ந	தாவரங்களும், விலங்குகளும் - தொல்காப்பிய ர் - தமிழர்கள் போற்றிய அறக்கோட்பாடு- சங் கரங்களும் துறை முகங்களும் - சங்ககாலத் சாழர்களின் வெற்றி. இந்திய தேசிய இயக்கம் மற்றும் இந்திய பண் தெலைப்போரில் தமிழர்களின் பங்கு - இந்திய	கக்கால் ந்தில் ஏ ரபாட்டி <u>ர</u> ்	த்தில் தமிழ ரற்றுமதி ம ற <b>குத் தமி</b> ழ	ழகத்தி மற்றுட மர்களி	நில் ம் இ  ன் ப	எழு இறக் பங்க	த்தறில குமதி <b>ளிப்பு</b>	பும் கல் - கட	வியும் லகடந்த
இந்திய விடு	த இயுக்கும் இக்கிய முகக்குமுக்கில்		•		_				
இந்திய விடு சுயமரியாதை	த இயக்கம் - இந்திய மருத்துவத்தில் <sub> </sub> ப்படிகள் - தமிழ்ப் புத்தகங்கள்களின் அச்சு வரல	சித்த	மருத்துவ		_	<b>ாங்கு</b>	-	கல்வெ	
இந்திய விடு சுயமரியாதை		சித்த	•		_	<b>I</b> ங்கு	-		
இந்திய விடு சுயமரியாதை கையெழுத்து TEXT BOOK:		சித்த பாறு.	மருத்துவத		_	<b>Iங்கு</b>	-		
இந்திய விடு சுயமரியாதை கையெழுத்து TEXT BOOK: 1. ஆ. பூ	பப்படிகள் - தமிழ்ப் புத்தகங்கள்களின் அச்சு வரல நபாலன், தமிழர் மரபு, VRB Publishers Pvt Ltd, 2022,	சித்த பாறு.	மருத்துவத		_	<b>ப</b> ங்கு			
இந்திய விடு சுயமரியாதை கையெழுத்த TEXT BOOK: 1. ஆ ட REFERENCES நமிழ	பப்படிகள் - தமிழ்ப் புத்தகங்கள்களின் அச்சு வரல பூபாலன், தமிழர் மரபு, VRB Publishers Pvt Ltd, 2022, ச : க வரலாறு- மக்களும் பண்பாடும்- கே கே பிள்ளை கள் கழகம்)	சித்த மாறு. அலகு 1, ர (வெளி	மருத்துவ <u>த</u>	த்தின் 	L		) ) ) )	கல்வெ	ட்டுகள்
இந்திய விடு சுயமரியாதை கையெழுத்த TEXT BOOK: 1. ஆ ட REFERENCES 1. தமிழ பணி	பப்படிகள் - தமிழ்ப் புத்தகங்கள்களின் அச்சு வரல பாலன், தமிழர் மரபு, VRB Publishers Pvt Ltd, 2022, : நக வரலாறு- மக்களும் பண்பாடும்- கே கே பிள்ளை கள் கழகம்) னித்தமிழ் - முனைவர் இல. சுந்தரம் (விகடன் பிர	சித்த பாறு. அலகு I, I (வெளி! சுரம்)	மருத்துவத் II,III,IV,V. யீடு தமிழ்நா	ந்தின் ரடு பா	ட்டு	ால் ப	) ) ) )	கல்வெ	ட்டுகள்
இந்திய விடு சுயமரியாதை கையெழுத்த TEXT BOOK: 1. ஆ ட REFERENCES 1. தமிழ பணி	பப்படிகள் - தமிழ்ப் புத்தகங்கள்களின் அச்சு வரல பூபாலன், தமிழர் மரபு, VRB Publishers Pvt Ltd, 2022, ச : க வரலாறு- மக்களும் பண்பாடும்- கே கே பிள்ளை கள் கழகம்)	சித்த பாறு. அலகு I, I (வெளி! சுரம்)	மருத்துவத் II,III,IV,V. யீடு தமிழ்நா	ந்தின் ரடு பா	ட்டு	ால் ப	) ) ) )	கல்வெ	ட்டுகள்

<sup>\*</sup>includes Term Work(TW) & Online / Certification course hours

SE OUTCOMES:	BT Mapped
ப முடித்தவுடன், மாணவர்கள்	(Highest Level)
தமிழ் மொழி மற்றும் இலக்கியத்தில் மதிப்புமிக்க கருத்துக்களை விளக்க முடியும்.	Understanding (K2)
தமிழர்களின் சிற்பம் மற்றும் அவர்களின் ஓவியங்கள் பற்றி விளக்க முடியும்.	Understanding (K2)
தமிழர்களின் நாட்டுப்புற மற்றும் தற்காப்புக் கலைகளைப் பற்றி சுருக்கமாகக் கூற முடியும்.	Understanding (K2)
தமிழர்களின் திணைக் கோட்பாடுகளைப் பற்றி விளக்க முடியும்.	Understanding (K2)
இந்திய தேசிய இயக்கம் மற்றும் இந்திய பண்பாட்டிற்குத் தமிழர்களின் பங்களிப்பு பற்றி விளக்க முடியும்.	Understanding (K2)
	ப முடித்தவுடன், மாணவர்கள் தமிழ் மொழி மற்றும் இலக்கியத்தில் மதிப்புமிக்க கருத்துக்களை விளக்க முடியும். தமிழர்களின் சிற்பம் மற்றும் அவர்களின் ஓவியங்கள் பற்றி விளக்க முடியும். தமிழர்களின் நாட்டுப்புற மற்றும் தற்காப்புக் கலைகளைப் பற்றி சுருக்கமாகக் கூற முடியும். தமிழர்களின் திணைக் கோட்பாடுகளைப் பற்றி விளக்க முடியும். இந்திய தேசிய இயக்கம் மற்றும் இந்திய பண்பாட்டிற்குத் தமிழர்களின் பங்களிப்பு பற்றி

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1			1			2	3	2	2	=	3		
CO2			18	A		2	3	2	2	2 2	3		
CO3	1 . 1 . 1					2	3	2	2		3		
CO4			_			2	3	2	2		3		
CO5						2	3	2	2		3		

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

ASSESSMENT	PATTERN -	THEORY
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Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total
CAT1	40	60	1/2 35.	d x			100
CAT2	40	60			1	9	100
CAT3	40	60					100
ESE	_			NA		,	

\*  $\pm 3\%$  may be varied (CAT 1, 2 & 3 – 50 marks )

Signature of the Chairman
Board of Studies - S& H (Chemistry)



		24	CYL13 -					LECTRON				SYST	EMS		
D							E, CSE, C	CSD, IT, A	IDS & AIM	L branc	nes)				
Branch		E	oblase.			branches	S	Sem.#	Catego	ry L	Т	Р	SL*	Total	Cred
Prereq	uisites		Nil	¥				1/2	BS	0	0	30	0	30	1
Preamb			metry ex	periment Iso aims t	s for the to impart	estimation	on of give	ots of voluen sample hardness,	s and the	reby, to	impro	ve th	e ana	vtical sk	ills. Th
1.	Asses	ssment		ven water	sample	for the su	uitability o	f drinking /	/ industrial	purpos	e by e	stimat	ting the	carbona	ate, nor
2.		0.000	-				in the giv	en river/bo	ore well wa	iter sam	ple.				-
3.	Perfo	rm Win	kler's met	hod for th	ne determ	nination of	f dissolved	d oxygen ir	n the given	wastev	ater sa	ample	<del></del>		- 1
4.	Deter	minatio	n of COD	in the giv	ven wate	r sample.		N.		· ·					
5.	Estim	ation o	fstrength	and amo	unt of ac	id in a giv	en solutio	n using pH	l meter.						
6.	Deter	minatio	n of stren	gth and a	mount of	f mixture	of acids p	resent in th	ne given so	olution u	sing C	onduc	ctivity r	neter.	
7.	Deter	minatio	n of conc	entration	of Nickel	by Spect	rophotom	etric metho	od.			8	21		
8.	Estim	ation o	f copper o	content fro	om discar	rded PCB	's by lodo	metric met	thod.				171		a si
9.	Deter	minatio	n of iron	present in	the give	n sample	by perma	nganomet	ric method	•					
10.	Volum	netric e	stimation	of chrom	ium from	electropla	ating slud	ge using p	ermangan	ometric	method	i.	100		
11.	Electi	roplatin	g process	(Demon	stration).	7		1 6			100	-			
12.	Repo	rt prepa	aration -ba	ased on t	ne data re	eceived fr	om the ar	alysed wa	iter quality	parame	ters (D	emor	nstratio	n).	
REFER	RENCE	S/ MAN	UAL/SO	FTWARE	:				-	e I					
1.	Palar	nisamy ganapat	P.N., Mathy Publis	anikandaı hers, Ero	n P., Ge de, 2024	eetha A.	and Mai	njula Rani	K., "Che	emistry	Labora	atory	Manua	al", 1 st	Edition
COURS On con				, the stud	lents wil	l be able	to						(H	BT Map <sub>l</sub> lighest L	
CO1	estim	ate the	amount o	of hardnes	ss, alkalir	nity, DO a	nd COD	present in	the given s	sample.	0			nalyzing Precision	
CO2	interp	ret the	experime	ntal resul	ts obtain	ed from c	onductivity	y meter an	d pH mete	r.	-		Д	nalyzing Precision	(K4),
CO3			the deter			by Spect	rophotom	eter, Copp	er by Iodo	metry, I	on and	i	А	nalyzing Precision	(K4),
			,	.320,,,,,,		apping o	f COs wit	h POs and	d PSOs					1000001	(00)
COs/P	Os	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	P010	P	011	PSO1	PSO
CO1	1	2	2	3	2		2	1	т . Т						
CO2	2	2	2	3	2		2	1							
	3		2	3	2		2								1

<sup>\*</sup>includes Term Work(TW) & Online / Certification course hours

# 1st sem for EEE, EIE, ECE & 2nd sem for CSE, CSD, IT, AIDS & AIML

Signature of the Chairman



									AL, IOT A				02001		
Progra Branc		. &	All BE	/BTech B				Sem.	Categor	y L	Т	Р	SL*	Total	Credit
Prerec		es	Nil				2	1/2	ES	0	0	90	0	90	3
Pream									nowledge		ineeri		th hand	505	-
LIST	)F FX	PERIM		house wir		net of Th	ings and	Web Te	echnologie	S.					
LIOT	<i>J</i> 1 LA	LIXIII	LINIO	LALKOR		A – Elec	trical Ins	tallatio	n (30 Hou	rs)					
1.	Det	erminat	tion of Ic	ad curren	its and se	elect suita	able comp	onents	for Protec	tion					(4)
2.	Dev	elop a	wiring c	ircuit for in	ncandesc	ent lamp	and fluor	escent	lamp using	Simpl	e and	Stair	case W	/iring	
3.	Dev	elop ar	nd Inves	tigate wiri	ng circuit	ts for Call	ling Bell S	System :	and Dimm	able Li	ght		4		
4.	Cre	ate wiri	ng circu	it for sing	e phase	motor	= 6	e e	- 10.00						
5.	Dev	elopme	ent of IC	T based	energy m	onitoring	and contr	rol		0					=
6.	Меа	asurem	ent and	analysis o	of electric	cal param	eters for l	Photovo	oltaic Sola	r Panel	X.				
	7						ernet of	Things	(30 Hour	s)					
1.	Des	sign a S	lingle la	yer PCB I	ayout des	signing		1	* 1				-		
2.	Fab	ricate S	Single la	yer PCB	printing							ji.	×	D	
3.	Ass	emblin	g, solde	ring and c	lesolderii	ng practio	e on sing	le layer	PCB					- 200	
4.	Ser	sor an	d actuat	or interfac	ing with	internet e	nabled m	icrocon	troller						
5.	Ser	nsor an	d actuat	or calibrat	tion										,
6.	Inte	gration	of micr	ocontrolle	r based s	system wi	th Cloud	platforn	n						
	Т				PAR	TC-We	b Techn	ologies	s (30 Hour	s)					*
1.	Des	sign a s	imple w	eb page ι	sing bas	ic HTML	tags and (	CSS pro	perties				*		
2.	Des	sign a re	esponsiv	e webpag	e using E	Bootstrap	framewor	rk	· .	α <					
3.	Des	sign a v	vebpage	e for signu	p and log	gin valida	tion form	using J	avascript a	and PH	Р	-		· · ·	
4.						PHP, M	ySQL and	d host th	ne website	in the	serve	ſ <b>.</b>			***
REFE	RENC	ES/ M	ANUAL	/SOFTW	ARE:										
1.			Manua												
2.		CI.Free Reilly, 2		isabeth R	obson, "I	Head Firs	t JavaScr	ipt Prog	gramming	A Brair	n-Frier	idly G	Buide",	1st Editio	n,
3.	Eric	T.Free	eman,El	isabeth R	obson, "I	Head Firs	t HTML a	ind CSS	S",2nd Edi	ion, O'	Reilly	, 201	2	(4)	, ,
4.	Lyn	ın Beigl	nley,"He	ead First S	QL",1st	Edition, C	Reilly,20	007.							
		UTCO		urse, the	studente	، مطالف	abla ta					2	Ι,	BT Map Highest I	
CO1	1			viring circ				heir rec	uirement					Applying	(K3)
		-												Precision Applying	
CO2	-			d solution:		1		e cases	<b>.</b>	-	<u> </u>			Precision Applying	(S3)
CO3	Des	sign an	a nost a	n interact				h DO-	and Doc					Precision	
COs/F		P01	PO2	PO3	PO4	PO5	PO6	PO7	PO PO	PO9	PO	10	PO11	PSO1	PSO
/PSC	-	3	3	3	2	3		1	3	2	2		2	1.001	1 302
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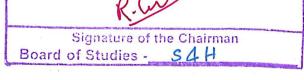


		· · ·		24	4MNT12	- QUAI	NTITATIV	VE AP	TITUDE - I			2	17		
			(C	ommo	n to all E	nginee	ring and	Tech	nology bra	ınche	s)				· · · · · · · · · · · · · · · · · · ·
Program Branch	nme &	All B.	E/B.Tec	h Bran	ches	· ·	Se	em.	Category	L	Т	Р	SL*	Total	Credit
Prerequ	isites	Basic	Mather	natical	skills			1	МС	20	0	0	10	30	0
Preamb	le				lving skil		nhance a	analyti	cal skills.			-		-	
Unit – I	, avatama				Equation		divioibilit	, BO	DMAC Dl	- 11	`F.		20.4	<b>.</b>	6
-Simplif	ication – F	Problem	ıs.						DMAS Rul						
									linear equa	ations	with	ı two ı	/ariabl	les – Ap	plications
Unit - II	aneous li				nd Perce		simple pr	robiem	S.				-		6
Ratio ar	nd Propo	rtion: T	hird, Fo	ourth an	d mean p	proportio			son of ratio			ound	ratio -	Duplica	
									Simple pro						
Unit - II				ss, Inte		ercentag	jes – Pro	biems	on populat	ion –	Pro	biems	on de	preciation	on. 8
Profit ar	nd Loss:	Basic c	oncepts	- Cost	price – S	Selling p	orice – Pr	ofit an	d Loss – S	imple	pro	blems			-
Simple a	and Comp	pound i	interes	t: Conc	epts – Pe	ercentag	e of inter	est – D	Difference b	etwe	en s	imple	intere	st and c	ompound
	- Simple p	orobiem	S.	_						-					1
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1.	limited, 2		Quant	itative /	Aptitude 1	or Com	ipetitive i	=xamır	nations", Re	evised	1 Ec	lition,	S.Cha	ind and	company
REFERE	ENCES/ N	/IANUA	L/SOF	TWAR	E:				-						
1.	Abhijit G 2020.	uha,"Qu	ıantitati	ve Apti	tude for	Compet	titive Exa	aminati	on", 7 <sup>th</sup> Ed	dition,	Мс	Graw	Hill E	Education	on, India,
2.	https://wv	ww.india	abix.cor	n/aptitu	de/quest	ions-and	d-answer	<u>s</u>							***************************************
3.	https://w	ww.gee	ksforge	eks.org	/aptitude-	-questio	ns-and-a	answer	<u>'S</u>						
	E OUTCO			the etc.	danta:	11 ha ah	la 4a		,					ВТ Мар	
CO1					two varia		ile to	17.						lighest	
		1.0												Applying	<u> </u>
CO2					centage									Applying	(K3)
CO3	Solve pr	ofit and	loss, s	imple in	iterest an	nd comp	ound inte	erest p	roblems.				,	Applying	(K3)
	. "				Mappin	g of CC	)s with F	Os ar	nd PSOs	·					
COs/PO	s PO1	PO2	PO3	PO4	PO5	PO6	PO7	POS	PO9	PO	10	PO1	1 P	SO1	PSO2
CO1	2	2													
CO2	2	2											7		
CO3	3	3				6			1						
1 – Sligh	nt, 2 – Mo	derate,	3 – Sul	bstantia	l, BT- Blo	oom's T	axonomy	/	11					***	-
	ų,	-0			ASSES	SMENT	PATTE	RN - T	HEORY						(6)
	Bloom's gory*		nember (K1) %		Underst		Apply (K3)		Analyzing (K4) %		alu (K5	ating		eating (6) %	Total %
	.Τ1				30		70				, , ,		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	-, ,,	100
CA	T2		0 _		30	)	70		tionidade en actividade en actividade						100
CA	T3				30	)	70		\ \				1		100
		1													



 $^{\star}$  ±3% may be varied (CAT 1, 2 & 3 – 50 marks & ESE – 100 marks) \*includes Term Work (TW) & Online / Certification course hours







	(Common to all E	ingineering and	Technology by	ranches	s)		1 3		
Programme & Branch	All B.E/B.Tech Branches	Sem	Category	L	T	Р	SL*	Total	Credit
Prerequisites	Nil	2	HS	45	0	0	45	90	3
Preamble	This course aims at up skilling students in practicing the langua and academic contexts.	ge skills to acc	quire verbal an	id com	munic	write a	as well proficie	as to fac ncy in pro	ilitate the ofessiona
sUnit – I	Grammar, Verbal Aptitude, List	ening, Speakir	ng. Reading &	Writin	a				9
to a Match Comm Etiquette – <b>Readi</b> <i>Atomic Habit</i> s <b>Wr</b> i	, Compound, and Complex Senten entary and Filling in a Table – List ng: Scanning a Text, Power Point ting: Business Letters: Enquiry and	ening to TED ta Presentations Complaint	alks - <b>Speakin</b> – The Best V	g: Apol Vay to	logizir Start	na – T	alking a	about Mar : An Exc	nners and erpt from
Unit – II	Grammar, Verbal Aptitude, List and Indirect Speech – Verbal Apti	ening, Speakir	ig, Reading &	Writin	g				9
Choices and Profe	ng Information – Career Related ssional Skills – <b>Reading:</b> Reading An Excerpt from <i>Atomic Habits</i> - <b>Wr</b>	for Local and G iting: Job Appl	Blobal Compret lication: Cover	nension	1 – Ho	w to I	Find and	Fix the	auses o
W1116 111	Grammar Verbal Antitude Liet	ening Speaking	na Readina 9	Mritim	~	toour	16 – Sil		
	Grammar, Verbal Aptitude, List	ening, Speakir	ng, Reading &	Writin	q				9
Grammar: Active	and Passive Voice - Verbal Aptitu	de: Error Spotti	ng, Reading & ng – Sentence	Writin	<b>g</b> /emer	nt – A	obreviat	ions and A	9 Acronyms
Grammar: Active  - Listening: Liste	and Passive Voice – Verbal Aptitu ning to Podcast Interviews and Nev	de: Error Spotti	ng, Reading & ng – Sentence Speeches – Sr	Writin Improv	<b>g</b> /emer a: Pre	nt – Al	obreviat	ions and A	9 Acronyms
Grammar: Active  - Listening: Liste Opinions about P	and Passive Voice – <b>Verbal Aptitu</b> ning to Podcast Interviews and Nev odcast – <b>Reading:</b> Reading a Pr	de: Error Spotti vs/Motivational ocedure – Cro	ng, Reading & ng – Sentence Speeches – Sp ss Cultural Co	Writin Improv peaking	g /emer g: Pre icatio	nt – Al esentii n - H	obreviating a Poi	ions and A	9 Acronyms / – Giving
Grammar: Active  – Listening: Liste Opinions about P Inevitable and Bac	and Passive Voice – Verbal Aptitu ning to Podcast Interviews and Nev	de: Error Spotti vs/Motivational ocedure – Cro	ng, Reading & ng – Sentence Speeches – Sp ss Cultural Co	Writin Improv peaking	g /emer g: Pre icatio	nt – Al esentii n - H	obreviating a Poi	ions and A	9 Acronyms / – Giving
Grammar: Active  – Listening: Liste Opinions about P Inevitable and Bac based Essays	and Passive Voice – Verbal Aptitu ning to Podcast Interviews and Nev odcast – Reading: Reading a Pr I Habits Impossible: An Excerpt fro	de: Error Spotti vs/Motivational ocedure – Cro m <i>Atomic Habit</i> :	ng, Reading & ng – Sentence Speeches – Sp ss Cultural Co s – Writing: T	Writin Improverse Deaking Ommun Types o	g /emer g: Pre icatio f Essa	nt – Al esentii n - H	obreviating a Poi	ions and Ant of View Make Goo	9 Acronyms / – Giving od Habits d Opinior
Grammar: Active  – Listening: Liste Opinions about P Inevitable and Bac based Essays Unit – IV	and Passive Voice – Verbal Aptituning to Podcast Interviews and Newodcast – Reading: Reading a Pril Habits Impossible: An Excerpt from Grammar, Verbal Aptitude, List	de: Error Spotti vs/Motivational ocedure – Cro m Atomic Habiti ening, Speakir	ng, Reading & ng – Sentence Speeches – Sp ss Cultural Co s – Writing: T	Writin Improved the community of the com	g /emer g: Pre icatio f Essa	nt – Al esentii n - H ays: 7	obreviating a Poi ow to I Argumei	ions and Ant of View Make Goo ntative and	9 Acronyms / – Giving od Habits d Opinior
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<sup>\*</sup> includes Term Work (TW) & Assignments, Tutorials and Case Studies

2020 20 0 0 0 0 0	SE OUTCOMES:  npletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	construct contextual and functional grammar to enhance the linguistic competence	Applying (K3)
CO2	listen, comprehend and infer implied meanings of the given text	Applying (K3)
CO3	speak clearly to develop competence to participate in oral discourses such as discussions / meetings / interviews and deliver presentations	Creating (K6)
CO4	critically read various texts by understanding contextual meanings and respond appropriately	Understanding (K2)
CO5	Analyze different genres of writing and making precise non-technical and technical documents	Analyzing (K4)
, VI (-	Mapping of COs with POs and PSOs	

COs/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PS01	PSO2
CO1	a a mystic	ent.			system in	1 1	ومستهاج	1	3	1	1		
CO2	ie i							2	3	-3,	1		E .
CO3					1 42 -		1 7	2	3	1	2	i in lega	
CO4						1		. 4.7	3	1	2		er f
CO5	,=								3		2		- 11

1 – Slight, 2 – Moderate, 3 – Substantial, BT- Bloom's Taxonomy

#### **ASSESSMENT PATTERN - THEORY**

Test / Bloom's Category*	Remembering (K1) %	Understand ing (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1	-	30	70		The State of the S	<u> </u>	100
CAT2		30	35		67 July 1197 4	35	100
CAT3	- 1, 1-	20	45	35	15 15 15 15 15 15 15 15 15 15 15 15 15 1		100
ESE	-	20	55	10		15	100

\*  $\pm 3\%$  may be varied (CAT 1, 2& 3 – 50 marks & ESE – 100 marks)

Door.

Signature of the Chairman Board of Studies - SaH (English) J. Region



The second	24MAC21 - MULTIVARIABLE CAL (Common to CIVIL, MECH, MTS						1		
Programme &	B.E – CIVIL, MECH,MTS, ECE,EEE,EIE	Sem.	Category	L	T	Р	SL*	Total	Credit
Branch	& B.Tech - FT								
Prerequisites	Nil	2	BS	45	7	16	52	120	4
Preamble	To impart the knowledge of partial derivati and analytic functions to the students for so								
Unit – I	Functions of Several Variables:	- N				- 1		11. 12.	9
Functions of two	or more variables – Partial derivatives – Tota nima – Lagrange's multiplier method.	l differentia	I – Application	ns: M	axim	a and	l minim	a – Con	straine
Unit – II	Multiple Integrals:							-	9
	on in cartesian coordinates – Change of order	of integrati	on – Applicat	ion: A	Area	hetwe	een two	CUIVES	
integration in ca	rtesian coordinates – Volume as triple integral	s.	, фр. ос.		00	Dom		o our voo	Tilpi
Unit – III	Vector Calculus:		-						9
	ative – Gradient of a scalar point function – Div								
	vectors – Vector Integration: Introduction – e above theorems and evaluation of integrals			verge	ence	theo	rems (	without	proof) -
Unit – IV	Analytic Functions:	doing thom							9
Functions of a	complex variable - Analytic functions - Nec	essary and	sufficient co	nditio	ns (	exclu	ding pi	roof) – (	Cauchy
Riemann equation	ons (Statement only) – Properties of analytic f	unction (Sta	atement only)	– Ha	rmor	nic fur	nction -	- Constr	uction c
	- Conformal mapping: w = z + a, az, 1/z - Bil	linear trans	formation.						T =
Unit – V	Complex Integration:	agral formu	la Cinavilari		Clas	aifi a a	<i>(</i>	Na	9
	auchy's theorem (without proof) – Cauchy's int it proof) – Applications: Evaluation of definite								
	ordinary and partial derivatives	6 <del>7 ·</del> . ·	18 4					1 1 1 1 1	
	ng extreme values of function of two variables	5							2
	ng double and triple integrals	.4	7 2.			it.	0 5 4		
4. Finding	the area between two curves	-							
5. Computi	ng gradient, divergence and curl of point func	tions					-	<u> </u>	
6. Applying	Milne-Thomson method for constructing anal	lytic function	n						
7. Determin	nation of Mobius transformation for the given s	set of points	3						
8. Finding	poles and residues of an analytic function	F <sup>2</sup>							- 1
TEXT BOOK:			5.70	. 7					-
	amy P., Thilagavathy K. and Gunavathy K., " 2016, S.Chand and Co., New Delhi.	Engineering	g Mathematic	s Fo	r Firs	st Yea	ar B.E/	B.Tech",	Reprin
REFERENCES/	MANUAL / SOFTWARE:	F - F	, L			6	-80		
1. Kreyszig	E, "Advanced Engineering Mathematics ", 10	) <sup>th</sup> Edition, c	lohn Wiley, N	ew D	elhi,	India	, 2016.	-	
2. Ramana Delhi, 20	B V, "Higher Engineering Mathematics", 1st	Edition, Ta	nta McGraw-F	Hill Pu	ublisl	hing (	Compa	ny Limit	ed, Nev
	ny C., Vengataasalam S., Arun Prakash K. India Education, New Delhi, 2018.	and Sures	sh M., "Engin	eerin	g Ma	athen	natics ·	- II", 2 <sup>nd</sup>	Edition
4. Grewal E	3.S, "Higher Engineering Mathematics" 44th	dition, Khar	nna Publisher	s, Ne	w De	elhi, 2	018.	121	
5. Multivari	able Calculus and Complex Analysis Laborato	ory Manual.					1		

\*includes Term Work (TW) & Online / Certification course hours

tel her seriorses	SE OUTCOMES:  npletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	Compute the total derivatives and extreme values of multivariable functions.	Applying (K3) Manipulation (S2)
CO2	Apply multiple integrals to compute the area and volume of the regions.	Applying (K3) Manipulation (S2)
CO3	Apply the concepts of derivatives and line integrals of point functions in engineering problems.	Applying (K3) Manipulation (S2)
CO4	Construct analytic functions and bilinear transformations and determine the image of given region under the given conformal mapping.	Understanding (K2) Manipulation (S2)
CO5	Apply the techniques of complex integration to evaluate real and complex integrals over closed curves.	Applying (K3) Manipulation (S2)

CO-/DO-	DO4	DOG	DO2	DO4	DOE	DOC	DO7	DOG	DOG	DO40	DO44	D004	2000
COs/POs	PO1	PUZ	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	3	2		3			97 8 <sub>10</sub>	-				11.120
CO2	3	3	2		3		- 11	LI T					1501
CO3	3	3		-	3							- 45 <sup>V</sup>	
CO4	3	3			3			- = 8				Y F.	42 7.
CO5	3	3	3		3				1.				

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

#### **ASSESSMENT PATTERN - THEORY**

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1		40	60		range L	Investigation of	100
CAT2	10	40	60		free will be present take.		100
CAT3		50	50				100
ESE		30	70				100

\* ±3% may be varied (CAT 1, 2 & 3 - 50 marks & ESE - 100 marks)







		24PHT23- PHYSICS FOR ELI	ECTRONIC	S ENGINEE	RING	i		- (, )	rt av 3	energia - I
18 412	Sangar.	(Common to ECE, EE	E and EIE	branches)	10			Y 10.	3475	1212
Progra Branch		BE - ECE, EEE and EIE branches	Sem.	Category	L	Т	Р	SL*	Total	Credit
Prereq	uisites	Nil	2	BS	45	0	0	45	90	3
	7	Be also me in the company of the company	Cart. 1 ty	Las 199 June	45	. 64	g di		s Mas	
Preamb		This course aims to impart the knowledge on semiconductors and dielectric materials. It electronics engineering.								
Unit – I		Crystal Physics:							Sept III	9
planes number	<ul> <li>Miller in</li> <li>Atomic</li> <li>ctions: line</li> </ul>	olids – Space lattice – Unit cell – Crystal structur dices – Interplanar spacing in cubic crystal – packing factor – Body centered cubic– Face cer e, surface and volume imperfections.	Number o	f atoms per	unit c	cell -	Atom	ic radio	ıs – Cod	ordination – Crystal
		Quantum Physics and Applications:	Mattan	Y D		1125				9
Schrod	inger's time ional box.	on – Planck's theory – Compton scattering – I e-independent and time-dependent wave equation	Matter wav ions – Phy	es – Propen sical significa	ince o	Heis of wa	senbei ve fur	g unce action –	rtainty p Particle	rinciple – in a one-
Unit - I		Conducting and Superconducting Materia		1.4		-	. 1	1 2/1	1 -	9
free ele Tempe	ectron theo rature depo	ctron theory of metals – Electrical conductivity – ory (qualitative) – Fermi distribution function – endence of resistivity – Critical field – Meissner o conductors – Cryotron.	Effect of	temperature	on Fe	ermi	function	on – Su	percond	uctivity -
Unit – I		Semiconducting Materials:								9
gap - E	Extrinsic se	luctor – Carrier concentration – Fermi level – Va emiconductors – Carrier concentration in n-type cations – Solar Cell: Principle, construction and	and p-type							
Unit -	V	Dielectric Materials:			. =	_	>	Y		9
Electro	nic, ionic,	ectric constant – Polarization – Displacement ve orientational and space-charge – Frequency a ic loss – Dielectric breakdown – Uses of dielectr	ind temper	ature depend	dence	- Typ e – Ir	es of nterna	polariza I field –	tion med Clausiu	chanisms: is-Mosotti
TEXT E	BOOK:									
1.	Katiyar A.	K, Pandey C.K, "Engineering Physics: Theory a	nd Practica	al", 2 <sup>nd</sup> edition	, Wile	y, 20	15 (U	nit I, II).		
2.	Tamilaras (Unit III, I'	san K and Prabu K, "Physics for Engineering I' V, V).	", 1 <sup>st</sup> Editio	on, McGraw I	Hill E	duca	tion P	vt. Ltd.,	New De	elhi, 2023
REFER	RENCES:									
1.	Malik H.K	and Singh A.K, "Engineering Physics", 2nd Editi	on McGrav	v-Hill Educati	on, N	ew D	elhi, 2	2022.		
2.		ulu M.N, Kshirsagar P.G and Arun Murthy T.V.S							on, S Ch	and,

\*includes Term Work (TW) & Online / Certification course hours

	SE OUTCOMES: mpletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	analyze seven crystal systems, interplanar spacing in cubic lattice, BCC, FCC, HCP crystal systems and the types of crystal imperfections and their impacts.	Analyzing (K4)
CO2	investigate the concepts of quantum mechanics to describe Planck's theory, Compton effect and the behavior of electrons in a metal by solving Schrodinger's wave equations.	Analyzing (K4)
CO3	examine the concepts of classical and quantum free electron theories of metals to compute the electrical conductivity and to comprehend the effect of temperature on Fermi function for conducting materials and also to apply the concept of Cooper pair to comprehend the properties, types and application of superconductors.	Analyzing (K4)
CO4	Inspect the concept of density of states to compute the carrier concentration, electrical conductivity and band gap of intrinsic semiconductors and to compute the carrier concentration of extrinsic semiconductors, and also to explain the phenomenon related to Hall Effect and the working of solar cells.	Analyzing (K4)
CO5	explore the concept of electric dipole moment and electric polarization to comprehend the different polarization mechanisms in dielectrics, Clausius-Mosotti relation, dielectric loss, dielectric breakdown and to describe its uses in capacitors.	Analyzing (K4)

					wappin	g or co	S WITH	PUS and	a P30s				
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	2		5 1165		7 1=	1	1 =		- 1	20 Apr 20	e, att
CO2	3	2	2					1	1		1		
CO3	3	. 2	2					1	1	- 1.4.	1		. = =
CO4	3	2	2			(30)		1	1	1,1,1,1,1	1		- 47.

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

2

2

CO5

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total
CAT1	-	40	50	10	×	41091	100
CAT2		40	50	10		- 1 - 1 - N - N - N - N - N - N - N - N	100
CAT3		40	50	10			.100
ESE		40	50	10			100

\* ±3% may be varied (CAT 1,2,3 - 50 marks & ESE - 100 marks)

Signature of the Chairman of Studies - 5 & H, Physics

**Board of Studies** 



, !	24MET11 – E	NGINEE	RING DRAW	ING					
	(Common to Civil, Mech, MTS,	Auto, Cl	hem, ECE, E	EE, EI	E, FT	brar	iches)		
Programme & Branch	BE / BTech – Civil, Mech, MTS, Auto, Chem, ECE, EEE, EIE, FT branches	Sem.	Category	L	Т	Р	SL*	Total	Credit
Prerequisites	Nil	1 / 2#	ES	30	15	0	45	90	3
Preamble	To impart knowledge on engineering surfaces, isometric projections and Auto								
Unit – I	Introduction to Engineering drawing	and Eng	ineering Cui	ves			,		6+3
dimensioning. P (Eccentricity met	nstruments - BIS conventions and speci rojection of pointsin different quadrants hod). Cycloidal Curves- Cycloids and Inv	. Engine	ering Curves	: Cor	ic se				ola, Hyperbola
Unit – II	Projection of planes and Solids ygonal surface and circular lamina inclin	II	<u> </u>					1	6+3
p)	er and cone when the axis is inclined to o								
to VP - Obtaini	Sectioning of Solids and Developments sms, pyramids, cylinder and cone in simple true shape of section. Development ders and Cones(Cutting planes inclined to	ole verticate	al position by eral Surfaces	cuttin of Si	g plan	es ir	clined		
Sectioning of pri to VP - Obtaini	sms, pyramids, cylinder and cone in simp ng true shape of section. Developmen	ole verticate	al position by eral Surfaces	cuttin of Si	g plan	es ir	clined		perpendicular
Sectioning of pri to VP - Obtaini Pyramids, Cylind Unit - IV Principles of ison	sms, pyramids, cylinder and cone in simp ng true shape of section. Development ders and Cones(Cutting planes inclined to Isometric Projection metric projection - Isometric scale - Isom	ole vertica t of Late o HP and netric pro	al position by eral Surfaces perpendicula	cuttin of Si r to VI	g plan mple only	es ir and ).	clined trunca	ted Solids	perpendicular Like Prisms, 6+3
Sectioning of pri to VP - Obtaini Pyramids, Cylind Unit - IV Principles of ison	sms, pyramids, cylinder and cone in simp true shape of section. Developmenters and Cones(Cutting planes inclined to Isometric Projection Isometric projection - Isometric scale - Isometric projection of orthographic in to isometric scale.	ole vertica t of Late o HP and netric pro- views	al position by eral Surfaces perpendicula jections of sir	cuttin of Si r to VI	g plan mple only	es ir and ).	clined trunca	ted Solids	perpendicular Like Prisms, 6+3
Sectioning of pri to VP - Obtaini Pyramids, Cylind Unit - IV Principles of iso and cylinders. Counit - V Conversion of is Introduction to Codrawing with din	sms, pyramids, cylinder and cone in simp ng true shape of section. Development ders and Cones(Cutting planes inclined to Isometric Projection metric projection - Isometric scale - Isom	ole vertica t of Late o HP and netric pro- views uction to ection (Fro- design a um 2 exe	al position by eral Surfaces perpendicula jections of sir o AutoCAD eehand sketcland developmercises manda	cuttin of Si r to VI mple a hing onent o	g plan mple only and tru inly). f new	es ir and ).  uncat	ed soli	ds like pri	perpendicular Like Prisms 6+3 sms, pyramids 6+3 /o-dimensional
Sectioning of pri to VP - Obtaini Pyramids, Cylind Unit - IV Principles of iso and cylinders. Counit - V Conversion of is Introduction to Codrawing with din	sms, pyramids, cylinder and cone in simple true shape of section. Developmenters and Cones(Cutting planes inclined to Isometric Projection  metric projection - Isometric scale - Isomonversion of orthographic in to isometric orthographic Projection and Introdometric projection into orthographic projection projection into orthographic projection and Introdometric projection into orthographic	ole vertica t of Late o HP and netric pro- views uction to ection (Fro- design a um 2 exe	al position by eral Surfaces perpendicula jections of sir o AutoCAD eehand sketcland developmercises manda	cuttin of Si r to VI mple a hing onent o	g plan mple only and tru inly). f new	es ir and ).  uncat	ed soli	ds like pri	perpendicular Like Prisms 6+3 sms, pyramids 6+3 /o-dimensional
Sectioning of pri to VP - Obtaini Pyramids, Cylind Unit – IV Principles of iso and cylinders. Counit – V Conversion of is Introduction to Codrawing with din 3D models of va	sms, pyramids, cylinder and cone in simple true shape of section. Developmenters and Cones(Cutting planes inclined to Isometric Projection  metric projection - Isometric scale - Isomonversion of orthographic in to isometric orthographic Projection and Introdometric projection into orthographic projection projection into orthographic projection and Introdometric projection into orthographic	ole vertica t of Late o HP and netric pro- views uction to ction (Fro- design a um 2 exe- ng softwa	al position by eral Surfaces perpendicular jections of sire of AutoCAD eehand sketcland developmercises mandare. (Minimum	cuttin of Si r to VI mple a hing onent o eatory) 2 exe	g planmple only only. Inly). In new only only only. Introises	es ir and ). uncat proc ducti	ed soli	ted Solids  ds like pri  Creating two Solid Model).	perpendicular Like Prisms 6+3 sms, pyramids 6+3 /o-dimensional
Sectioning of pri to VP - Obtaini Pyramids, Cylind Unit – IV Principles of iso and cylinders. Counit – V Conversion of is Introduction to Codrawing with din 3D models of va	sms, pyramids, cylinder and cone in simple true shape of section. Development ders and Cones(Cutting planes inclined to a lisometric Projection metric projection - Isometric scale - Isomonversion of orthographic in to isometric orthographic Projection and Introdometric projection into orthographic projection projection and introdometric projection into orthographic projection using suitable software (Minimurious components using suitable modelling	ole vertica t of Late o HP and netric pro- views uction to ction (Fro- design a um 2 exe- ng softwa	al position by eral Surfaces perpendicular jections of sire of AutoCAD eehand sketcland developmercises mandare. (Minimum	cuttin of Si r to VI mple a hing onent o eatory) 2 exe	g planmple only only. Inly). In new only only only. Introises	es ir and ). uncat proc ducti	ed soli	ted Solids  ds like pri  Creating two Solid Model).	perpendicular Like Prisms 6+3 sms, pyramids 6+3 /o-dimensional

\*includes Term Work(TW) & Online / Certification course hours

#sem1: Cvil, Mech, MTS, Auto, Chem branches & sem 2: ECE, EEE, EIE, FT branches

	SE OUTCOMES: mpletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	interpret international standards of drawings and sketch the engineering curves	Applying (K3)
CO2	draw the projection of planes and solids	Applying (K3)
CO3	draw sectioning and developing of 3D primitive objects like prisms, pyramids, cylinders, cones	Applying (K3)
CO4	sketch the isometric projections of simple and truncated solids and convert orthographic projection in to isometric drawing	Applying (K3)
CO5	obtain multi view projections and solid models of objects using CAD tools	Applying (K3)

Mapping	of	COs	with	POs	and	DSOc
Mapping	OI	CUS	with	PUS	anu	POUS

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	1		,	2		-			3			
CO2	3	1	1	(8	2	_				3	4 mg -		
CO3	3	1	1		2		9(			3			
CO4	3	1	1		2					3	<i>z</i> .		
CO5	3	1	1		2		ps.			3			

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

ASSESSMEN	T PATTI	FRN - TI	HEORY
AGGLGGIVILIN	IFAII	-1/14 - 11	ILUKI

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1		-	100	- L	-	-	100
CAT2	-	-	100	-	/ <del>-</del>	. Class a	100
CAT3			100	-	-		100
ESE	-	-	100	-	-	P	100

\*  $\pm 3\%$  may be varied (CAT 1, 2 & 3 – 50 marks & ESE – 100 marks)

Signature of the Chairman





	24CSC23- DATA STI								
	Common to ECE, E	EE, E &	I Branches						
Programme & Branch	Common to ECE, EEE, E & I Branches	Sem.	Category	L	Т.	Р	SL*	Tot al	Credit
Prerequisites	Programming in C	2	ES	45	0	30	45	120	4
Preamble	This course is indented to introduce the corto novice learner from cross disciplines in E					ures a	and not	ion of a	lgorithms
Unit – I	List:	n de de	nederly of a		en T		- , , -	50.4	9
Data Structur	es - Abstract Data Types (ADT) - List ADT an olynomial Addition	nd Array	Implementa	ation -	- Link	ed Lis	st - Do	ubly Li	nked List
Unit – II	Stack and Queues:								9
	Array and Linked List implementation of Stacks					onver	sion - F	Postfix I	Expression
	Queue ADT – Array and Linked List implemental	tion of C	lueues - App	olication	ons				•
Unit - III	I <b>rees:</b> naries – Binary Trees –Binary Tree Traversa	ls - The	Search Tr	ΙΔ ΑΘ'	)T _	Binar	v Sear	ch Tre	9 es_Priorit
	ry Heap)- Application: Expression Tree		, ocaron m	00 / 11	10,0	Diriai	y ocui	011 110	oo i nong
Unit – IV	Graphs:								9
	finitions – Elementary Graph Operations- Tra nning Tree: Prim"s Algorithm- Kruskal"s Algoritl		<ul><li>Shortest</li></ul>	-Path	Algo	rithms	: Dijks	tra"s A	lgorithm -
Unit – V	Sorting and Hashing:				*		-		9
Sorting - Prel	minaries - Insertion Sort - Quicksort - Merge	sort - I	Hashing - G	enera	al Ide	a – Ha	ash Fu	nction -	- Separate
	ERIMENTS / EXERCISES: mentation of C programs using pointers	144	- 17 9				_		
	mentation of singly linked list and its operations	3	merchin.						
	mentation of doubly linked list and its operation		The			G	7	* - 1 -	4.3
	mentation of Stack and its operations		10						
	mentation of Queue and its operations								100
	mentation of Stack and Queue using Singly Lin	ked List							
	ert a given In-fix Expression into Post-fix Expre			DT			1,711	4 - 22	-47,
8. Imple	mentation of Binary Search Tree traversals					. 1			
9. Imple	mentation of Graph traversals		Ser. 1	- 4 -				I- H	
10. Imple	mentation of sorting algorithms: Insertion and M	Merge so	ort			-1.		3	
	<u> </u>	-	, H = -		1				
TEXT BOOK					t 5 " :	۰			<u> </u>
1. Weiss 2016.	s M. A., "Data Structures and Algorithm Analysis	s in C",	2nd Edition,	Pears	son E	ducati	on Asia	a, New	Delhi,
REFERENCE	S/ MANUAL / SOFTWARE:								
7	vitz Sahni, Andreson Freed, "Fundamentals of rabad, 2011.	Data St	ructures in C	)", 2nd	d Edit	ion, U	niversi	ties Pre	ess,
Lange	sam Y.M., Augenstein J. and Tenenbaum A. M., ation, 2015.	"Data S	Structures us	sing C	and	C++",	2nd Ed	dition, F	Pearson
*inc	ludes Term Work(TW) & Online / Certification	COURSE	hours						

<sup>\*</sup>includes Term Work(TW) & Online / Certification course hours

	SE OUTO			ourse, 1	he st	udents w	rill be al	ole to	1 64		14 K.	. Sign and	BT Ma (Highest	
CO1	apply Li	st AD	OT fo	or solvin	g the	given pro	blems				1.6	Alexandro	Applyin Precision	
CO2	make us	se of	arra	ave and	linked	l lists to c	reate Sta	ack and	Oue	ie ADTs	eva et		Applyin	g (K3)
	make u	30 01	arre	iyo ana	III IKCC	1 11313 10 01	cate ou	aon and	Que	JC 71B 10.	3		Precisio	
CO3	utilize T	ree A	ADT	to devel	op sir	mple appl	cation					. 13	Applyin Precisio	
CO4	make us	se of	Gra	ph ADT	for st	andard pi	oblems				1990	- High of	Applyin Precisio	
CO5	illustrate	e the	use	of stand	dard s	sorting an	d Hashir	ng Tech	nique	s		Corpus (Corpus Association	Applyin Precisio	
						Марр	ing of C	Os wit	h POs	s and PSC	)s		1 1	Laborate de la companya de la compan
COs/ POs	PO1	PC	02	PO3	PO	4 PO5	PO6	P07	РО	B PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	2	1	1						1	1		
CO2	3	2	2	1	1	ran I man ba		1.371		- 187	1	1		
CO3	3	2	2	1	1					r	1	1		
CO4	3	2	2	1	1						1	1		- 1-11
CO5	- 3	2	2	1	1						1	1		
1 – Sli	ight, 2 – N	/lode	rate	, 3 – Sul	bstant	tial, BT-B	loom's 7	axonor	ny					
				- <u>- 1</u>		ASSE	SSMEN	NT PAT	TERN	- THEOR	Y		<del>!</del>	
	/ Bloom'ategory*	s		nember (K1) %	ing	Underst		Appl g (K3		Analyzi ng (K4) %	1 2 2	ting (K5)	Creating (K6) %	Total %
u u	CAT1			,		45	5	55	5	- 14 g - 14 C			e samo o po	100
	CAT2					35	5	65	5	e the me				100
	ESE				1	35	5	65	5				Jan 17, 17 341	100

RE W

Signature of the Chairman

\* ±3% may be varied (CAT 1,2 &3 - 50 marks & ESE - 100 marks)

Board of Studies - CSE

CADEMIC COLLAROR MIC COLLAROR M

July

5. 7217/28 ES. RAMYA]

	24TAM02 - TAMILS								
	(Common to All Engineering	ng and Techn	ology Branc	hes)				. 12 EF5	
Programme & Branch	All BE/BTech Branches	Sem.	Category	L	Т	Р	SL*	тот	Credit
Prerequisites	Nil	2	HS	15	0	0	15	30	1
Preamble	This course aims to impart the essential know	ledge on the t	tamil culture a	nd rel	ated	techn	ology		
UNIT – I	WEAVING AND CERAMIC TECHNOLOGY					. 7			3
Weaving Industr	y during Sangam Age – Ceramic technology – B	lack and Red	Ware Potterie	es (BF	RW) -	- Graf	fiti on P	otteries.	as le
UNIT – II	DESIGN AND CONSTRUCTION TECHNOLO	OGY	1 3243	25-4	4	_	PuP	12/9	3
stones of Sanga Temples of Cho	Structural construction House & Designs in house arm age – Details of Stage Constructions in Sila las and other worship places – Temples of Naya – Chetti Nadu Houses, Indo – Saracenic archited	appathikaram aka Period –	<ul> <li>Sculptures</li> <li>Type study (N</li> </ul>	and T ladura	Гетр ai Ме	les of	Mama	llapuram	- Grea
UNIT – III	MANUFACTURING TECHNOLOGY		T - 1			a -		-	3
Minting of Coin	ding – Metallurgical studies – Iron industry – Iro is – Beads making – industries Stone beads vidences – Gem stone types described in Silappa	- Glass bea							
UNIT – IV	AGRICULTURE AND IRRIGATION TECHNO	DLOGY	Territoria			,	71		3
	ds, Sluice, Significance of Kumizhi Thoompu of Agro Processing – Knowledge of Sea – Fish cific Society.								
UNIT – V	SCIENTIFIC TAMIL & TAMIL COMPUTING								3
	Scientific Tamil – Tamil computing – Digitalizati iil Digital Library – Online Tamil Dictionaries – Sc			pmer	nt of	Tamil	Softwa	re – Tan	nil Virtua
TEXT BOOK:			· .			, r.			
1. Social Life	e of Tamils (Dr.K.K.Pillay) A joint Publication of T	NTB & ESC a	ınd RMRL – (i	n prin	t)		> -		
2. Social Life	e of the Tamils – The Classical Period (Dr.S.Siga	ravelu) (Publi	shed by: Inter	natior	nal In	stitute	of Tan	nil Studie	s).
REFERENCES:				ar dish	W.	9			
1 1.	வரலாறு - மக்களும் பண்பாடும் - கே ரி ல் பணிகள் கழகம்), உலகத் தமிழாராய்				U	ாடு ட	ாடநூ	ல் மற்ற	றும்
	ந்தமிழ் முனைவர் இல. சுந்தரம், விகட							11111	
3. கீழடி ை	வகை நதிக்கரையில் சங்ககால நகர ந	ாகரிகம்.(தெ	ால்லியல் த	துறை	၅ ရ	വണി	பீடு)		
·   · · · ·		குறை வெ	பளியீடு	1				E E	
	ந ஆற்றங்கரை நாகரிகம் (தொல்லியல்	عادة الم	0						
4. பொருன <sub>5</sub> Historical	Heritage of the Tamils (Dr.S.V.Subatamanian, D	<u> </u>		ublish	ed by	y : Inte	ernation	al Institu	te of
4. பொருன 5. Historical Tamil Stu 6. The Contr	Heritage of the Tamils (Dr.S.V.Subatamanian, Ddies) ibution of the Tamils to Indian Culture (Dr.M.Val	or.K.D. Thiruna	avukarasu) (P	nation	al Ins	stitute	of Tam	il Studie:	
4. G山爪仮の 5. Historical Tamil Stu 6. The Contr Keeladi –	Heritage of the Tamils (Dr.S.V.Subatamanian, Ddies)	or.K.D. Thiruna armathi)(Pupli aigai; (Jointly	avukarasu) (Pi shed by Interi Published by:	nation	al Ins	stitute	of Tam	il Studie:	
4. GUIT(頂の 5. Historical Tamil Stu 6. The Contr 7. Keeladi – Tamilnadi 8. Studies in	Heritage of the Tamils (Dr.S.V.Subatamanian, Ddies) ibution of the Tamils to Indian Culture (Dr.M.Vala'Sangam City Civilzation on the banks of river Vala Text Book and Educational Services Corporation the History of India with Special Reference to Table	armathi)(Pupli aigai; (Jointly on, Tamilnadu amilnadu (Dr.I	avukarasu) (Prished by Interi Published by: ) K.K.Pillay) (Pu	nation Depa	al Ins	stitute nt of	of Tam Archae Autho	nil Studie: ology & r)	s).
4. GUIT(頂面 5. Historical Tamil Stu 6. The Control 7. Keeladi — Tamilnadi 8. Studies in	Heritage of the Tamils (Dr.S.V.Subatamanian, Ddies) ribution of the Tamils to Indian Culture (Dr.M.Vala'Sangam City Civilzation on the banks of river Vala Text Book and Educational Services Corporation	armathi)(Pupli aigai; (Jointly on, Tamilnadu amilnadu (Dr.I	avukarasu) (Prished by Interi Published by: ) K.K.Pillay) (Pu	nation Depa	al Ins	stitute nt of	of Tam Archae Autho	nil Studie: ology & r)	s).

\*includes Term Work (TW) & Online / Certification course hours

	SE OUTCOMES: mpletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	explain weaving and ceramic technology in tamil culture and tamil society.	Understanding (K2)
CO2	Illustrate about the design and construction technology.	Understanding (K2)
CO3	summarize about the manufacturing technology.	Understanding (K2)
CO4	explain the agriculture and irrigation technology.	Understanding (K2)
CO5	explain the significance of tamil in scientific and computing.	Understanding (K2)
000	Oxplain the digitileance of tariii in coloraile and compating.	Chacrotanang

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	was wide			S. E.A.TH	-L	3		3	2	2			
CO2	เล้ากรณ์	le de co			18 71	3	in-	3	2	2		1057 15	al section
CO3	THE STATE OF					3		3	2	2			
CO4						3		3	2	2			
CO5						3		3	2	2			

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

ASSES	SMENT PA	ATTERN -	- THEORY
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Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1	40	60					100
CAT2	40	60	2	- 1			100
CAT3	40	60					100
ESE				NA	f		

\* ±3% may be varied (CAT 1,2,3 - 50 marks)

Signature of the Chairman

Board of Studies - 5 & H (Physia)



	(Common to All Engineering and	Technolog	y Branches)			(			
Programme & Branch	All BE/BTech Branches	Sem.	Category	L	Т	P S	SL*	TOT	Cred
Prerequisites	Nil	2	HS	15	0	0	15	30	0.4
முன்னுரை	தமிழ் கலாச்சாரத்தோடு ஒன்றிய தொழில் ந	<u>ј</u> ட்பங்கன	ள பற்றிப்	எடுத்	துரை	<b>ரத்த</b>	ல்	TO ST	
அலகு - ၊	நெசவு மற்றும் பானை தொழில்நுட்பம்					HEV.		3	112
சங்க காலத்த கீறல் குறியீ()	ில் நெசவு தொழில் – பானைத் தொழில்நுட்ட }கள்	பம் கரு	ப்பு சிவப்பு	ЦП	ன்∟ங்	பகள்	h÷,i	பாண்ட	_களி
<b>அ</b> லகு - II	வடிவமைப்பு மற்றும் கட்டிடத் தொழில்நுட்ப	ம்	1600 p. r. n.	l bei		1 5	W.	3	
– சங்க கால விவரங்கள் – வழிபாட்டுத் மீனாட்சி அப	ில் வடிவமைப்பு மற்றும் கட்டுமானங்கள் & சா ந்த்தில் கட்டுமான பொருட்களும் நடுகல்லும் மாமல்லபுரச்சிற்பங்களும், கோவில்களும் — தலங்கள் — நாயக்கர் காலக் கோயில்கள் மமன் ஆலயம் மற்றும் திருமலை நாயக்கர்	– சிலம் சோழர் ச –மாதிரிச	ப்பதிகாரத்தி காலத்து டெ கட்டமைப்பு	ல் ( பருங் கள்	மேடை கோய பற்றி	) 1) o 1) o 1) o 1) o 1) o 1) o 1) o 1)	அடை கள் அறித	மப்பு ப மற்று நல், ப	பற்றிட ம் பிர மதுை
	சன்னை இந்தோ-சாரோசெனிக் கட்டிடக் கலை.								
<u>அலகு - III</u>	<mark>உற்பத்தித் தொழில்நுட்பம்</mark> ம் கலை – உலோகவியல் – இரும்புத் தெ						-	3	
உருவாக்கும்	ான்றுகளாக செம்பு மற்றும் தங்க நாணய தொழிற்சாலைகள் – கல்மணிகள் – கண்ணாடி ண்டுகள் – தொல்லியல் சான்றுகள் – சிலப்பதில	டி மணிக		ன் ப	ணிக	ள் -			மன ணிக
அலகு - №	வேளாண்மை மற்றும் நீர்ப்பாசனத் தொழில்ற								
அணை, ஏரி,	குளங்கள், மதகு – சோழர்கால குமிழித் தூ	ம்பின் பு							
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அணை, ஏரி, கால்நடைகளு – கடல்சார் ச அறிவுசார்சமூ அலகு - v அறிவியல் த மென்பொருட் தமிழ் அகராத	குளங்கள், மதகு – சோழர்கால குமிழித் தூருக்காக வடிவமைக்கப்பட்ட கிணறுகள் – வேளான அறிவு – மீன்வளம் – முத்து மற்றும் முத்துக்குவ மகம்.  அறிவியல் தமிழ் மற்றும் கணினித்தமிழ் அறிவியல் தமிழ் மற்றும் கணினித்தமிழ் அறிவியல் தமிழ் மற்றும் கணினித்தமிழ் கமிழின் வளர்ச்சி – கணினிதத்தமிழ் வளர்ச்சி கள் உருவாக்கம் – தமிழ் இணையக் கல்விக் திகள் சொற்குவைத் திட்டம்.	ம்பின் பு ன்மை மர ரித்தல் – – தமிழ் க்கழகம்	ற்றும் வேள பெருங்கட நூல்களை – தமிழ் மி	ாண் ல் கு மின்	மை ச றித்த பதிட் நூலச	ார்ந் <sub>த</sub> பன் பு ெ	த செ ன்னை செய்	பராம் சயல்ப டய அ 3 தல் – ணைய	ாடுக புறிவு தமிழ பத்தி
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அணை, ஏரி, கால்நடைகளு – கடல்சார் அ அறிவுசார்ச்சூ அலகு - V அறிவியல் த மென்பொருட் தமிழ் அகராத TEXT BOOK: 1. தமிழக கல்வியி 2. கணினித REFERENCES: 1. கீழடி-ை	குளங்கள், மதகு – சோழர்கால குமிழித் தூர் நக்காக வடிவமைக்கப்பட்ட கிணறுகள் – வேளான புறிவு – மீன்வளம் – முத்து மற்றும் முத்துக்கு நகம்.  அறிவியல் தமிழ் மற்றும் கணினித்தமிழ் மிழின் வளர்ச்சி – கணினிதத்தமிழ் வளர்ச்சி கள் உருவாக்கம் – தமிழ் இணையக் கல்விக் நிகள் சொற்குவைத் திட்டம்.  வரலாறு - மக்களும் பண்பாடும் - கே கே பிள்ள குதமிழ் முனைவர் இல. சுந்தரம், விகடன் பிரசு வகை நதிக்கரையில் சங்ககால நகர நாகரிகம்.	ம்பின் பு ன்மை மந ரித்தல் — — தமிழ் க்கழகம் அவனம், டூ ரம், 2016 (தொல்லி	ற்றும் வேள பெருங்கட நூல்களை – தமிழ் மி ளியீடு தமி சென்னை, 2	ாண் ம் மின் ம்நா ம்றை	மை ச றித்த பதிப் நூலச	ார்ந் <sub>ர</sub> பன் பு ெ டநூ	த செ ன்னை செய்	பராம் சயல்ப டய அ 3 தல் – ணைய	ாடுக புறிவு தமிபு பத்தில்
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அணை, ஏரி, கால்நடைகளு – கடல்சார் உ அறிவுசார்ச்ர அலகு - V அறிவியல் த மென்பொருட் தமிழ் அகராத TEXT BOOK: 1. தமிழக கல்வியி 2. கணினித REFERENCES: 1. கீழடி-ை 2. பொருன 3. Social Life	குளங்கள், மதகு – சோழர்கால குமிழித் தூருக்காக வடிவமைக்கப்பட்ட கிணறுகள் – வேளான பிறிவு – மீன்வளம் – முத்து மற்றும் முத்துக்கு மைற்றும் முத்துக்கு மற்றும் கணினித்தமிழ் அறிவியல் தமிழ் மற்றும் கணினித்தமிழ் குமிழின் வளர்ச்சி – கணினிதத்தமிழ் வளர்ச்சி கள் உருவாக்கம் – தமிழ் இணையக் கல்விக்குக் சொற்குவைத் திட்டம்.  வரலாறு - மக்களும் பண்பாடும் - கே கே பிள்ள கும் மிற்கு வைத் திட்டம்.  வரலாறு - மக்களும் பண்பாடும் - கே கே பிள்ள கும் மிற்குவைத் திட்டம்.  வரலாறு - மக்களும் பண்பாடும் - கே கே பிள்ள குடிகம் மிற்கள் கழகம்), உலகத் தமிழாராய்ச்சி நிறக்குமிழ் முனைவர் இல சுந்தரம், விகடன் பிரசுவிகை நதிக்கரையில் சங்ககால நகர நாகரிகம். இந்-ஆற்றங்கரை நாகரிகம் (தொல்லியல் துறை e of Tamils (Dr.K.K.Pillay) A joint Publication of TNTB & E	ம்பின் பு ன்மை மர ரித்தல் — — தமிழ் க்கழகம் நுவனம், ப ரம், 2016 (தொல்லி வெளியீ( SC and RN	ற்றும் வேள பெருங்கட நூல்களை – தமிழ் மி சென்னை, 2 யல் துறை நி) /RL — (in print	ாண் ல் கு மின் பின் ! ம்நா 002	மை ச றித்த பதிப் நூலச டு பா	ார்ந் <sub>ர</sub> பன் பு செ டநூ	த செ ஸ்ஸ் பிசய் பால் ப	பராம் சயல்ப 3 தல் – ணைய	ாடுக புறிவு தமிழ பத்தி
அணை, ஏரி, கால்நடைகளு – கடல்சார் ச அறிவுசார் சமூ அறிவியல் த மென்பொருட் தமிழ் அகராத TEXT BOOK: 1. தமிழக கல்வியி 2. கணினித REFERENCES: 1. கீழடி-ை 2. பொருன 3. Social Life 4. Social Life 5 Historical	குளங்கள், மதகு – சோழர்கால குமிழித் தூருக்காக வடிவமைக்கப்பட்ட கிணறுகள் – வேளான பிறிவு – மீன்வளம் – முத்து மற்றும் முத்துக்கு மைற்றும் முத்துக்கு மைற்றும் தமிழ் மற்றும் கணினித்தமிழ் மிறிவியல் தமிழ் மற்றும் கணினித்தமிழ் கிமிழின் வளர்ச்சி கனி உருவாக்கம் – தமிழ் இணையக் கல்விக்குகள் சொற்குவைத் திட்டம்.  வரலாறு - மக்களும் பண்பாடும் - கே கே பிள்ளில் பணிகள் கழகம்), உலகத் தமிழாராய்ச்சி நிறிக்கம் முனைவர் இல. சுந்தரம், விகடன் பிரசுவிகை நதிக்கரையில் சங்ககால நகர நாகரிகம்.	ம்பின் பு ன்மை மர ரித்தல் — — தமிழ் க்கழகம் நுவனம், ட ரம், 2016 தொல்லி வெளியீ( SC and RN Published I	ற்றும் வேள பெருங்கட நூல்களை – தமிழ் மி சென்னை, 2 யல் துறை நி) //RL – (in print by: Internation	ாண் ல் கு மின் ம்ற்நா 002	மை ச றித்த பதிட் நூலச பியீ(	ார்ந் <sub>ர</sub> பன் பு ெ டநூ	த லெ ஸ்ஸ் - இ	பராம் சயல்ப 3 தல் – ணைய மற்றுப்	ாடுகள் பறிவு தமிழ் பத்தில
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	determine the wavelength of a semiconductor laser, the particle size of a powder material, and the acceptance angle and numerical aperture of an optical fiber.  Analyzing (K4), Precision (S3)															
coa dete	ermine	the I-V	/ chara	cteristic	s of a					ristics of a l	JJT	and	the	Ar	nalyzing recision	(K4),
	frequency of an alternating current.  Precision (S3)  determine the specific resistance of a metallic wire, the band gap of semiconducting material, the thickness of a thin film and develop a coding / project / product.  Precision (S3)  Analyzing (K4)  Precision (S3)												(K4),			
					Man	pina o	f COs v	vith PO	s and F	PSOs						,
COs/POs	P01	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10		PC	011	PS	01	PSO2
CO1	3	2	2	3				3	1				2			
CO2	3	2	2	3				3	1	-			2			
CO3	3	2	2	3				3	1				2			
1 – Slight, 2	- Mod	lerate, 3	B – Subs	stantial,	BT- Blo	oom's T	axonon	ny								

\*includes Term Work (TW) & Online / Certification course hours

Signature of the Chairman Board of Studies - S & H (Physica) CHOEMIC CELL

CPC

		·					I BE/BT		ruring, anches)		· ·			
Programme Branch	&		All BE/	BTech	Branch	es	Se	m. C	ategory	L	ТР	SL*	Total	Credi
Prerequisite	s			Nil			. 1.	/2	ES	0	0 90	0	90	3
Preamble			puter-a	ided De					velop a p s, 3D Pri				basic kn tics and	owledge
LIST OF EXF	PERIM	ENTS /	EXER	CISES:		,			· .		* 7			
				PART	A – Ma	nufactı	iring La	borato	ory (30 H	ours)				
1 Selection	n of pr	oduct, fr	ee han	d sketch	ning and	detailir	ng		o A			4		
2 Constru	ction o	f model	using A	rc/TIG/	MIG/Ga	s/Spot	welding	operati	ions				ui)	
3 Enhanci	ng the	model	with she	eet meta	al									
4 Creating	the pa	arts of tl	ne mod	el using	lathe						i			
5 Creating	the pa	arts of tl	ne mod	el using	milling	and dril	ling mad	chines	a ·					
		P	ART B	– Produ	uct Des	ign and	l Develo	pmen	t Labora	tory (30	Hours)			
1 Free ha	nd ske	tching a	nd deta	iling of	the com	ponent	}					r.		
2 3D part	modell	ling of th	ne comp	onent u	using CA	AD softv	vare	7			-	_	7.1	_
3 Enginee	ring A	nalysis	of the c	ompone	nt mode	el			is a					
4 Generat	e the o	compon	ent usir	ıg 3D pr	inter	4.						4.		
				PA	RT C -	Roboti	cs Labo	ratory	(30 Hou	rs)				i i
Design o	of elec	tronic ci	rcuit an	d its de	bugging									
2 Assemb	ly and	interfac	ing of s	ensors,	actuato	ors and	wireless	comm	union mo	odules w	ith audr	no UNC	)	-
3 Develop	ment o	of embe	dded p	rogramr	ning and	d interfa	cing for	motion	control	and obs	tacle av	oidance		
4 Demons	stration	and te	sting of	robot in	static e	environn	nent							
				R	EFERE	NCES/	MANUA	AL /SO	FTWARE	<b>:</b> :	24	ž.		1
1 Foundat	tion Er	ngineerii	ng Labo	ratory N	Manual		-			W a				*
2 SOLID	WORK	S 2022	Softwa	re		**						ii e		
COURSE OI			ırse, th	e stude	ents wil	l be abl	e to		R 5	2 4			Γ Mappe thest Lev	
CO1	develo		rototype	model	using m			ations	like weldi	ing,		Ap	plying (Ka	3),
CO2	sketch	3D mo	del and	develo	p the pr	ototype	using 3	D printe	er	*			plying (K ecision (S	
CO3	desigr	and de	evelop t	he auto	nomous	robot fo	or real-ti	me apı	olications	· .			plying (K ecision (S	
					Mappin	g of C	Os with	POs a	nd PSOs	<b>S</b>		, ,	_	
COs/POs /PSOs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO <sup>2</sup>	1 - F	PSO2
CO1	3	3	3	2				3	2		2			1
CO2	3	3	3	3				3	2		2			
CO3	3	3	3	2				3	2		2			

20%

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9



				24	MNT21	- QUAN	VITATIT	E AP	TITUDE - II					
9 0			(C	ommon	to all E	nginee	ring and	Techi	nology bra	nches	).			
Progra Branch	mme & 1	All B.	E/B.Tec	h Branc	ches		Se	em.	Category	L	ТР	SL*	Total	Credit
Prereq	uisites	Basic	Mather	natical	skills			2	MC	20	0 0	10	30	0
Preaml	ble	To imp	art prob	olem sol	ving skil	Is and e	enhance a	analytic	cal skills.			1	-	,
Unit – I					s, Time				3					6
Mixture	rule – App nd Work:	olication Concep	s – Pro	blems. ork and v					i – Simple Simple prob		ns on	averag	jes – All	
Time a		ce: Tim	e, spee	d and d				Avera	ige speed -	Relat	ve spe	ed – P	roblems	on boat
Unit – I							bability:		K.					8
	tation and											-,		
TEXT E	pility: Bas	ic Conce	epis – P	фрисац	ons – Si	mpie pri	obiems.							
1.	Dr.R.S.A limited, 2		"Quant	itative A	ptitude 1	for Com	petitive E	xamin	nations", Re	vised	Edition	, S.Ch	and and	compan
		·												•
REFER	RENCES/		L/SOF	TWARE	<b>:</b>									
REFER		MANUA				Compe	titive Exa	minati	on", 7 <sup>th</sup> Ed	ition, I	/lcGrav	w Hill	Education	on, India
	Abhijit G 2020.	<b>MANUA</b> uha,"Qเ	ıantitati	ve Aptiti	ude for		titive Exa		on", 7 <sup>th</sup> Ed	ition, I	/IcGra	w Hill	Educatio	on, India
1.	Abhijit G 2020. https://w	MANUA uha,"Qu ww.india	iantitati	ve Aptitu	ude for le/quest	ions-and		<u>s</u>		ition, I	/lcGra	w Hill	Educatio	on, India
1. 2. 3.	Abhijit G 2020. https://w	MANUA uha,"Qu ww.india ww.geel	uantitativabix.com	ve Aptitud	ude for le/quest aptitude	ions-and	d-answers	<u>s</u>		ition, I	/IcGrav		Education  BT Map	pped
1. 2. 3. COURS	Abhijit G 2020. https://w https://w	ww.india ww.geel	antitativabix.con	ve Aptituden/apt	ude for le/quest aptitude	ions-and questio	d-answers	<u>s</u> inswer	<u>s</u>	ition, I	/IcGra	(1	ВТ Мар	ped Level)
1. 2. 3.	Abhijit G 2020. https://ww https://ww SE OUTCO npletion of Solve av	ww.india ww.geel DMES: of the coverages he prob	abix.con  ssforges  ourse, t , alligation	n/aptitudeks.org/sithe stud	ude for le/quest aptitude lents wi	ions-and -question II be ab	d-answers ons-and-a ole to ond work p	s inswer	<u>s</u>			(1	BT Mar Highest	pped Level)
1. 2. 3. COURS On cor	Abhijit G 2020. https://ww https://ww SE OUTCO mpletion of Solve av Solve t applicat	ww.india ww.geel OMES: of the co	abix.con esforged  burse, t , alligation blems oblems.	n/aptitudeks.org/siche stud	ude for le/quest aptitude lents wi mixtures and d	ions-and question II be ab time and istance,	d-answers ons-and-a ole to ond work p upstrea	s nswer problen m and	ns.	eam o		(1)	BT Map Highest Applying	pped Level) (K3)
1. 2. 3. COURS On con CO1	Abhijit G 2020. https://ww https://ww SE OUTCO mpletion of Solve av Solve t applicat	ww.india ww.geel OMES: of the co	abix.con esforged  burse, t , alligation blems oblems.	n/aptitudeks.org/sine studions or ron time	de/quest aptitude lents wi nixtures and d utation,	ions-and question II be ab , time and istance, combina	d-answers ons-and-a ole to ond work p upstrea	s inswer problen m and proba	ns. d downstre	eam o		(1)	BT Map Highest Applying Applying	pped Level) (K3)
1. 2. 3. COURSON COT	Abhijit G 2020. https://w https://w SE OUTCO npletion of Solve av Solve t applicat Solve pi	ww.india ww.geel OMES: of the co	abix.con esforged  burse, t , alligation blems oblems.	n/aptitudeks.org/sine studions or ron time	de/quest aptitude lents wi nixtures and d utation,	ions-and question II be ab , time and istance, combina	d-answers ons-and-a ole to ond work p one upstrea ation and	s inswer problen m and proba	ns. d downstre	eam o	riented	(1)	BT Map Highest Applying Applying	pped Level) (K3)
1. 2. 3. COURSON COT	Abhijit G 2020. https://ww https://ww SE OUTCO mpletion of Solve av Solve t applicat Solve pi	ww.india ww.geel DMES: of the coverages he problems	abix.con  ksforged  burse, t , alligation blems of blems. involvir	n/aptitudeks.org/sche stude ions or report time	de/quest aptitude lents wi nixtures and d utation, Mappin	ions-and- question II be ab , time and istance, combinating of CC	d-answers ons-and-a ole to ond work p upstrea ation and Os with P	s nswer problen m and proba	ns. d downstre	eam o	riented	(1)	BT Map Highest Applying Applying	pped Level) (K3) (K3)
1. 2. 3. COURSON CON CON CO1 CO2 CO3	Abhijit G 2020. https://ww https://ww SE OUTCO mpletion of Solve at applicat Solve pi  Os PO1 2	ww.india ww.geel  OMES: of the co verages he problems roblems	abix.con  ksforged  burse, t , alligation blems of blems. involvir	n/aptitudeks.org/sche stude ions or report time	de/quest aptitude lents wi nixtures and d utation, Mappin	ions-and- question II be ab , time and istance, combinating of CC	d-answers ons-and-a ole to ond work p upstrea ation and Os with P	s nswer problen m and proba	ns. d downstre	eam o	riented	(1)	BT Map Highest Applying Applying	pped Level) (K3) (K3)

#### **ASSESSMENT PATTERN - THEORY**

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1		30	70	ž.			100
CAT2		30	70			2	100
CAT3	-	30	70		-		100

 $^{\star}$  ±3% may be varied (CAT 1, 2 & 3 – 50 marks & ESE – 100 marks)

\*includes Term Work (TW) & Online / Certification course hour

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56. LSM 14.	24MAT33 – PROBAE	BILITY AND RA	ANDOM PRO	CES	S		3.7	1165 7 2	-una
Programme & Branch	BE & Electronics and Communication Engineering	Sem.	Category	L C	T	Р	SL*	Total	Credit
Prerequisites	Nil	3	BS	45	15	0	60	120	4
Preamble	To impart knowledge in random concepts of random process and							and a	oply the
Unit – I	Random Variables:		11.1-2-	21112	15.7	, T	NE.	9 .	9+3
	ontinuous random variables – Prob Variance – Moments – Moment ger			ity de	ensity	/ fun	ctions	- Math	ematical
Unit – II	Standard Probability Distribution	ns:							9+3
	itions: Binomial distribution – Poisso ion – Exponential distribution – Nori			listrib	ution	– Co	ontinuo	us Distr	ibutions:
Unit – III	Two Dimensional Random Varia		ilas eli		July 1881	, in		4	9+3
Introduction – Joregression.	oint probability distributions – Margi	nal and conditi	onal distribu	tions	– Co	varia	ance –	Correla	tion and
Unit – IV	Random Process:								9+3
	lassification – Stationary process –	Markov chains	<ul><li>Transition</li></ul>	prob	abiliti	es –	Limitir	ig distrib	utions -
Poisson process								-	
Unit – V	Correlation and Spectral densit								9+3
	<ul> <li>Cross Correlation – Properties –</li> <li>ine relation – Relationship between</li> </ul>								perties –
Wieliei- Killitteri	ille relation – ivelationship between	cross power sp	bectium and	CIUSS	COII	elalli	on turic	Juori.	
TEXT BOOK:									
	on T "Drobability and Statistics Da	ndom Process	oo and Ous	ina T	hoor	. J. 1	st []:4	in- NA-C	N ( 1211
	an, T, "Probability and Statistics, Ra n, Chennai, 2019.	ndom Process	es and Quet	ung i	neor	у, і	a Edit	ion, ivice	Fraw Hill
REFERENCES:	BATTARDS TO BUT A FEED OF FEED OF	gë përbutt	rdput.	7.75	; ///	us fe	27	الرشا وشيا	last :
1. Jay L. D. USA, 20	evore., "Probability and Statistics fo 16.	r Engineering a	and the Scie	nces"	, 9 <sup>th</sup>	Editi	on, Cẹ	ngage L	earning,
	ates and David.J.Goodman, "Prob I and Computer Engineers", 3 <sup>rd</sup> Editi					A fr	endly	Introduc	ction for
Edition, I	and J. W. Woods, "Probability and Pearson, USA, 2002.								
	K.S., "Probability and Statistics with John Wiley and Sons, 2002.	Reliability, Qu	eueing and	Comp	outer	Scie	ence A	pplicatio	ns", 2nd
*includes	Term Work (TW) & Online / Certific	ation course h	ours	,					

	SE OUTCOMES: upletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	Interpret the concept of random variables.	Applying (K3)
CO2	Apply the standard probability distributions in real time situations.	Applying (K3)
CO3	Apply the concepts of two dimensional random variables and regression in engineering problems.	Applying (K3)
CO4	Understand the concepts of Random Process and determine the temporal characteristics of random signals.	Applying (K3)
CO5	Apply the concepts of spectral densities and correlation functions to solve complex engineering problems.	Applying (K3)

NA :	- 5	00-	:41-	DO-		DCO-
Mapping	OI	CUS	WILLI	PUS	anu	<b>P3US</b>

										T			
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	1									. 15 1 2 2	
CO2	3	2	2		п							- L	j.to
CO3	3	3	2								, 10	o riose	39 39
CO4	3	2	1	2				T- T		a has s			ritt
CO5	3	3	3	2	1 1	la, "	H. 61.1	e g ,-ec	4 1 1		ax nungi	Alt made	nt.

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

## **ASSESSMENT PATTERN - THEORY**

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1		30	70			A2	100
CAT2		30	70				100
CAT3	ad i tra	30	70	. 13			100
ESE		30	70				100

\* ±3% may be varied (CAT 1, 2 & 3 – 50 marks & ESE – 100 marks)

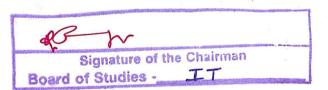






	24ITC33 – PROGRAMMI					-	-	
	(Common to ECE, EEE, EIE	Engineering branches	)		T			
Programme& Branch	ECE,EEE,EIE,MTS	, Sem.	Category	L	T.	Р	MP	С
Prerequisites	Programming in C	3	ES	3	0	2	ES	4
Preamble	This course introduces the core Python programm functions, classes ,objects and NumPy	ng. It emphasizes devel	oping Pythor	prog	ırams	with	all data	type
Unit – I	Introduction:					- x	0	9
dentifiers-da	ng strategies–program design tools–Types of errors– a types-input operation–comments–reserved words–introduction–conditional statement–iterative statements	ndentation-Operators a	and Expressi	ions-	Decis	sion (	Control	else i
Unit – II	Lists, Tuples and Dictionary:	See to Buddelland Laboria.		a. 5	1	.11 -		9
operations, as	update, nested, cloning, operations, methods, comp signments, returning multiple values, nested tuples, inde oping, nested, built-in methods—list vs tuple vs dictionary	x, and count method - [						
Unit – III	Strings and Regular Expressions:							9
operation-fur	tenation, append, multiply on strings-Immutable-format ctions-operators-comparing -iterating -string module ons-flag options.	ting operator–Built-in str –Regular Expressions	ing methods -match, sea	and for	unctio ub, fi	ns–s nd al	ice and fir	nd
Unit – IV	Functions and Modules:						1	9
Functions: In	roduction-definition-call-variable scope and lifetime -	return statement-functi	on argumen	ts-la	mbda	func	tion-	
	n strings-programming practices recursive function-M	odules: Modules-pack	ages-standa	ard lib	rary	meth	ods- fu	nctio
redefinition.								ů.
Unit – V	Object Orientation:							9
	jects: Class and objects-class methods and self-cons NumPy: NumPy Arrays-Computation on NumPy Arrays				uctor	–pub	lic and	priva
	Traini y ritanii y ritayo sompatation on rianii y ritayo	aprot = prot						
LIST OF EXP	ERIMENTS / EXERCISES:	·						
1. Progr	ams using conditional and looping statements		1 - 1 5 5				nia si	
2. Imple	mentation of list and tuple operations	p 40		9		-	*1	
3. Imple	mentation of dictionary operations		Station in the state of the sta		Ē			
4. Perfo	rm various string operations	1	a .					
5. Use r	egular expressions for validating inputs	6.50 (15.67)	H 10 m			·	-	
6. Dem	enstration of different types of functions and parameter pa	assing	30050		3 654	sofi.		
7. Deve	op programs using classes and objects	A						
8. Perfo	rm computation on NumPy arrays	- s	u					
0. 1 0110	different types of plots using Matplotlib							
9. Draw		· · · · · · · · · · · · · · · · · · ·						
9. Draw	aThareja.,"PythonProgrammingusingproblemsolvingapp	roach",3 <sup>rd</sup> impression,0	dordUniversi	tyPre	ss.,N	ewDe	lhi,2017	7.
9. Draw TEXT BOOK: 1. Reen		roach",3 <sup>rd</sup> impression,0	dordUniversi	tyPre	ss.,N	ewDe	lhi,2017	7.
9. Draw TEXT BOOK: 1. Reen REFERENCE	aThareja.,"PythonProgrammingusingproblemsolvingapp			tyPre	ss.,N	ewDe	lhi,2017	7.
9. Draw TEXT BOOK: 1. Reen REFERENCE 1. Nage	aThareja.,"PythonProgrammingusingproblemsolvingapp S/ MANUAL / SOFTWARE:	am Tech Press, NewDe	lhi,2018.		0.5	et	3	

		UTCO tion of	100000000000000000000000000000000000000	rse, the s	tudents	will be a	able to		0 540					BT Ma (Highest	
CO1	use	e basic	Python c	onstructs	to build s	simple pr	ograms			-		* "		Applyin Precision	
CO2	app	oly list,	tuple, an	d dictiona	ry to han	dle a var	iety of d	ata.				-	1_ 1	Applyin Precision	
CO3	app	oly strin	gs and re	egular exp	ressions	for sear	ching ar	nd retriev	al	n		ŧ		Applyin Precision	
CO4	sol	ve the p	oroblems	using fur	ctions ar	nd modul	les.						1	Applyin Precision	
CO5	арр	oly obje	ct-orient	ed concep	ots and p	erform b	asic data	a science	operati	ons usin	g Pyth	non		Applyin Precision	
						Мар	ping of	COs wit	h POs a	and PSO	s	1			naffaurs i
COs/P /PSO		PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PC	10	PO11	PSO1	PSO2
CO	1	3	2	2	2	3	1	2	3	3		2	2	3	2
CO2	2	3	2	2	2	3	1	2	3	3		2	. 2	3	2
CO	3	3	2	2	2	3	1	2	3	3		2	2	3	2
CO	4	3	2	2	2	3	1	2	3	3	7 - 3	2	2	3	2
COS	5	3	2	2	2	3	1	2	3	3	- :	2	2	3	2
1 – Sli	ght, 2	2 – Moc	lerate, 3	– Substar	ntial, BT-	Bloom's	Taxono	my					iX		
4						ASS	SESSME	NT PAT	TERN -	THEORY	Y				
	t / BI ateg	oom's ory*	Re	emember (K1) %	ing	Understa (K2)		Apply (K3)		Analyzi (K4) 9	-		luating (5) %	Creating (K6) %	Total %
	CAT	Γ1	L			25	5	7	5				1		100
1	CAT	Γ2				25	5	7:	5	1					100
	CAT	Г3				25	5	7	5						100
press	ES	E	6	_	-	25	5	7	5	-		-475	T = .		100



\* ±3% may be varied (CAT 1 ,2 & 3 – 50 marks & ESE – 100 marks)





		24ECT31 - DIGITA	L ELECTF	RONICS						-
Programme Branch	&	B.E. & Electronics and Communication Engineering	Sem.	Category	L	Т	Р	SL*	Total	Credit
Prerequisite	es	Nil	3	PC	45	0	0	45	90	3
Preamble		To gain knowledge about the number systems	s and to de	esign combina	ationa	l and	sequ	ential l	ogic circu	its.
Unit – I		Binary Numbers and Minimization Techniq	ues:				-	10	7	9
of Duality- Be	oolean	systems-Complements-Signed binary numbers- expression- Minimization of Boolean expression augh map minimization -Implementations of logic	ns- Minterr	n, Maxterm, S	Sum o	f Pro	-Morg ducts	gan's th (SOP)	eorem - F , Product	Principle of
Unit – II		Combinational Circuits Design:								9
Design proce adder -BCD comparator.	edure - adder-	<ul> <li>Half adder and subtractor – Full adder and sub Multiplexer- Demultiplexer – Decoder - Encoder</li> </ul>	otractor -Pa r – Parity c	arallel binary a hecker and g	adder Jenera	/ sub itor –	tracto Code	or – Ca e conve	rry look a erters- Ma	head gnitude
Unit – III		Design and Analysis of Synchronous Sequ	uential Cir	cuits:						9
	1 libilo	ps: SR, JK, D and T Master/Slave FF, Level and	Lage trig	gering - Desig	gn and	d ana	lysis	of sync	hronous s	sequentia
circuits: State	e diagr	ps: SR, JK, D and T Master/Slave FF, Level and ram, State table, State minimization and State as nous counters-up counter, down counter, up-dow Design and Analysis of Asynchronous Sec	ssignment. /n counter,	- Registers: S Ripple count	Shift re	d ana egiste	lysis ers, U	of sync niversa	hronous s	sequentia ister - 9
circuits: State Design of sy Unit – IV Introduction	e diagr nchron to asyr	ram, State table, State minimization and State as nous counters-up counter, down counter, up-dow	ssignment.	- Registers: S Ripple count ircuits: sign of Funda	Shift reters.	egiste	ers, U	niversa	al shift reg	ister - 9
circuits: State Design of sy  Unit – IV  Introduction	e diagr nchron to asyr	ram, State table, State minimization and State as nous counters-up counter, down counter, up-down Design and Analysis of Asynchronous Secunchronous circuits - State reduction and assignment	ssignment.	- Registers: S Ripple count ircuits: sign of Funda	Shift reters.	egiste	ers, U	niversa	al shift reg	ister - 9
circuits: State Design of sy Unit – IV Introduction Races – Haze Unit – V Introduction DTL circuits	to asyr ards: S to Digit	ram, State table, State minimization and State as nous counters-up counter, down counter, up-down Design and Analysis of Asynchronous Secundary Counters of State reduction and assignmentation Dynamic, Essential and Design of Hazard for the state of the	ssignment.  In counter,  quential C  nents - Des  free circuit  er dissipati  Totem-pole	- Registers: S Ripple count ircuits: sign of Funda s. ion, Propagat	menta	egiste	de se	quentia oise Ma implen	al shift reg	9 - Cycles -
circuits: State Design of sy Unit – IV Introduction Races – Haze Unit – V Introduction DTL circuits	e diagr nchron to asyr ards: S to Digir – Tran ND, NO	ram, State table, State minimization and State as nous counters-up counter, down counter, up-down Design and Analysis of Asynchronous Secunchronous circuits - State reduction and assignmentatic Dynamic, Essential and Design of Hazard to Digital Logic Families and PLDs:  tal Logic families -Characteristics: Fan-out, Powersistor-Transistor Logic: Open-Collector output, T	ssignment.  In counter,  quential C  nents - Des  free circuit  er dissipati  Totem-pole	- Registers: S Ripple count ircuits: sign of Funda s. ion, Propagat	menta	egiste	de se	quentia oise Ma implen	al shift reg	9 - Cycles -
circuits: State Design of sy Unit – IV Introduction Races – Haze Unit – V Introduction DTL circuits Inverter, NAI TEXT BOOK	e diagr nchron to asyr ards: S to Digir – Tran ND, NO	ram, State table, State minimization and State as nous counters-up counter, down counter, up-down Design and Analysis of Asynchronous Secunchronous circuits - State reduction and assignmentatic Dynamic, Essential and Design of Hazard to Digital Logic Families and PLDs:  tal Logic families -Characteristics: Fan-out, Powersistor-Transistor Logic: Open-Collector output, T	ssignment.  In counter,  quential C  nents - Des  free circuit  er dissipat  Fotem-pole  nal logic c	Registers: S Ripple count ircuits: sign of Funda s. ion, Propagat output, Thre ircuits using F	menta ion de e-stat	elay a e out	de se	quentia oise Ma implen	al shift reg	9 - Cycles -
circuits: State Design of sy Unit – IV Introduction Races – Haze Unit – V Introduction DTL circuits Inverter, NAI  TEXT BOOK  1. More	e diagr nchron to asyr ards: S to Digit – Tran ND, NC	ram, State table, State minimization and State as nous counters-up counter, down counter, up-down Design and Analysis of Asynchronous Secundary Counters - State reduction and assignmentatic Dynamic, Essential and Design of Hazard (Digital Logic Families and PLDs: tal Logic families -Characteristics: Fan-out, Pownsistor-Transistor Logic: Open-Collector output, TOR using CMOS logic, Realization of combination	ssignment.  In counter,  quential C  nents - Des  free circuit  er dissipat  Fotem-pole  nal logic c	Registers: S Ripple count ircuits: sign of Funda s. ion, Propagat output, Thre ircuits using F	menta ion de e-stat	elay a e out	de se	quentia oise Ma implen	al shift reg	9 - Cycles
circuits: State Design of sy Unit – IV Introduction Races – Haze Unit – V Introduction DTL circuits Inverter, NAI  TEXT BOOK  1. More	e diagr nchron to asyr ards: S to Digit – Tran ND, NO	ram, State table, State minimization and State as nous counters-up counter, down counter, up-down Design and Analysis of Asynchronous Secunchronous circuits - State reduction and assignmentatic Dynamic, Essential and Design of Hazard for Digital Logic Families and PLDs: tal Logic families -Characteristics: Fan-out, Pownsistor-Transistor Logic: Open-Collector output, TOR using CMOS logic, Realization of combination of Combi	ssignment. In counter, quential C nents - Des free circuit er dissipat Fotem-pole anal logic c cation Pvt.	Registers: S Ripple count ircuits: sign of Funda s. ion, Propagat output, Thre ircuits using F	menta menta cion de e-stat PLDs:	elay a e out	de se	quentia oise Ma implen	al shift reg	9 - Cycles -

<sup>\*</sup>Includes Term Work (TW) & Online / Certification course hours



	SE OUTCOMES: mpletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	apply Boolean laws and Karnaugh map for logic minimization	Applying (K3)
CO2	design combinational circuits	Applying (K3)
СОЗ	design synchronous sequential circuits	Applying (K3)
CO4	design asynchronous sequential circuits	Applying (K3)
CO5	design digital circuits using MOS and PLDs.	Applying (K3)

### Mapping of COs with POs and PSOs

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	3					,	*				3	
CO2	3	3	3		2:0	2		2	2	r		3	
CO3	3	3	3			2	17	2	2			3	
CO4	3	3	3		i i i i i i i i i i i i i i i i i i i	2		2	2			3	-11
CO5	3	3	3		,	2		2	2			3	

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

	ASSE	SSMENT	<b>PATTERN</b>	- THEORY
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Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1		20	80				100
CAT2		20	80				100
CAT3		20	80				100
ESE		10	90		*		100

\* ±3% may be varied (CAT 1, 2 & 3 - 50 marks & ESE - 100 marks)







	24ECT32 – ELECTROM	AGNETIC	FIELDS						
Programme & Branch	B.E & Electronics and Communication Engineering	Sem.	Category	L	т	Р	SL*	Total	Credi
Prerequisites	Nil	3	PC	45	0	0	45	90	3
Preamble	To impart the knowledge on the behavior of elections of elections are the control of the control	ctric field an	d magnetic fi	eld in	statio	c and	I time v	arying	
Unit – I	Unit Title: Static electric Fields								9
Definition of Ele charge and surf	Co-ordinate System – Rectangular – Cylindrical actric Field Intensity- Calculation of electric field inteace charge-Electric Flux Density – Gauss Law – Pro – Relationship between potential and electric field -	nsity due to of of Gauss	o different ch s Law – Appl	narge icatio	confi ns(Pc	guration a	tions: I nd Lin	Point cha e charge	arge, lin
Unit – II	Unit Title: Conductors and Dielectrics	=		2				A	9
conditions for	<ul> <li>Current density – point form of Ohm's law – continuelectric fields- Definition of Capacitance-Several</li> </ul>	ity equatior Capacitano	n for current ce examples	Natur - Po	e of c	lieled 's ar	tric ma	aterials -E place's e	Boundar equation
Capacitance of	parallel plate using Laplace's equation.								
Unit – III Biot-Savart Law on the axis of a	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin circular and rectangular loop carrying a current I -	ite and infir - Ampere's	ite wire carry circuital law	and:	simpl	e ap	plicatio	etic field	netic flu
Unit – III Biot-Savart Law on the axis of a density- Magne Inductance – Ind	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin circular and rectangular loop carrying a current I - circ Vector Potential – Magnetic moment-Nature of nuctance of loops and solenoids – Definition of mutual	ite and infir - Ampere's nagnetic ma Il inductanc	ite wire carry circuital law aterials -Mag e – simple ex	and :	simpl bour	e ap	plicatio	netic field ins. Magi tions-Def	intensit netic flu inition c
Unit – III Biot-Savart Law on the axis of a density- Magne Inductance – Ind Unit – IV Faraday's law –	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - ic Vector Potential – Magnetic moment-Nature of nuctance of loops and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current –Maxwell's four equations in in	ite and infir - Ampere's nagnetic mand al inductance agnetic Wantegral form	uite wire carry circuital law aterials -Mag e – simple ex aves n and differer	and inetic ample	simpl bour es.	e application	plicatio condi	netic field ns. Magi tions-Def	intensit netic flu inition c
Unit – III Biot-Savart Law on the axis of a density- Magne Inductance – Ind Unit – IV Faraday's law – form -Derivation	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - ic Vector Potential – Magnetic moment-Nature of nucleatance of loops and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current –Maxwell's four equations in in of Wave Equation- Wave equation in Phasor form - Figure 1.	ite and infir - Ampere's nagnetic mand al inductance agnetic Wantegral form	uite wire carry circuital law aterials -Mag e – simple ex aves n and differer	and inetic ample	simpl bour es.	e application	plicatio condi	netic field ns. Magi tions-Def	intensity netic flux inition o
Unit – III Biot-Savart Law on the axis of a density- Magne Inductance – Inductance – Inductance Unit – IV Faraday's law – form -Derivation Unit – V	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - ic Vector Potential – Magnetic moment-Nature of nucleatance of loops and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current –Maxwell's four equations in it of Wave Equation- Wave equation in Phasor form - Function of Unit Title: Uniform Plane Waves	ite and infir - Ampere's nagnetic mal inductance agnetic Wantegral form Poynting Ve	ite wire carry circuital law aterials -Mag e – simple ex aves and differer ctor and the f	and netic cample tial for low o	simpl bour es. orm- I f pow	e appladary Maxwer.	plication condi	netic field ns. Magi tions-Def quation ii	intensit netic flu inition o
Unit – III Biot-Savart Law on the axis of a density- Magne Inductance – Ind Unit – IV Faraday's law – form -Derivation Unit – V Plane waves in	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - ic Vector Potential – Magnetic moment-Nature of nucleatance of loops and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current –Maxwell's four equations in in of Wave Equation- Wave equation in Phasor form - Figure 1.	ite and infir  - Ampere's nagnetic mal inductance agnetic Wantegral form Poynting Ve  - Propagat	ite wire carry circuital law aterials -Mag e – simple exaves and different ctor and the faction in good of	and inetic cample attal for low of condu	simpl bour es. orm- I f pow	e appladary Maxwer.	plication condi	netic field ns. Magi tions-Def quation ii	intensity netic flu- inition of 9 n Phaso
Unit – III Biot-Savart Law on the axis of a density- Magne' Inductance – Inc Unit – IV Faraday's law – form -Derivation  Unit – V Plane waves in normal and oblice	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - dictic Vector Potential – Magnetic moment-Nature of note ductance of loops and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current – Maxwell's four equations in it of Wave Equation- Wave equation in Phasor form - Funit Title: Uniform Plane Waves  Unit Title: Uniform Plane Waves	ite and infir  - Ampere's nagnetic mal inductance agnetic Wantegral form Poynting Ve  - Propagat	ite wire carry circuital law aterials -Mag e – simple exaves and different ctor and the faction in good of	and inetic cample attal for low of condu	simpl bour es. orm- I f pow	e application	plication condi	netic field ns. Magi tions-Def quation ii	intensity netic flu- inition of 9 n Phaso
Unit – III Biot-Savart Law on the axis of a density- Magne Inductance – Ind Unit – IV Faraday's law – form -Derivation Unit – V Plane waves in	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - dictic Vector Potential – Magnetic moment-Nature of note ductance of loops and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current – Maxwell's four equations in it of Wave Equation- Wave equation in Phasor form - Funit Title: Uniform Plane Waves  Unit Title: Uniform Plane Waves	ite and infir  - Ampere's nagnetic mal inductance agnetic Wantegral form Poynting Ve  - Propagat	ite wire carry circuital law aterials -Mag e – simple exaves and different ctor and the faction in good of	and inetic cample attal for low of condu	simpl bour es. orm- I f pow	e application	plication condi	netic field ns. Magi tions-Def quation ii	intensit netic flu inition o
Unit – III Biot-Savart Law on the axis of a density- Magne Inductance – Ind Unit – IV Faraday's law – form -Derivation Unit – V Plane waves in normal and oblice TEXT BOOK:	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - dictic Vector Potential – Magnetic moment-Nature of note ductance of loops and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current – Maxwell's four equations in it of Wave Equation- Wave equation in Phasor form - Funit Title: Uniform Plane Waves  Unit Title: Uniform Plane Waves	ite and infir - Ampere's nagnetic mal inductance agnetic Wantegral form Poynting Ve - Propagateters of unit	ite wire carry circuital law aterials -Mag e – simple exaves and different ctor and the fiction in good of form plane was	and inetic cample and file of the cample and	simpl bour es. orm- i f pow	e applidary Maxwer Re	plication condi	netic field ns. Magi tions-Def quation ii	intensitinetic fluinition of 9 n Phase
Unit – III Biot-Savart Law on the axis of a density- Magnet Inductance – Inductance	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - tic Vector Potential – Magnetic moment-Nature of notes and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current –Maxwell's four equations in it of Wave Equation- Wave equation in Phasor form -F  Unit Title: Uniform Plane Waves  lossless dielectric – Plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence plane waves i	ite and infir - Ampere's nagnetic mal inductance agnetic Wantegral form Poynting Ve - Propagateters of unit	ite wire carry circuital law aterials -Mag e – simple exaves and different ctor and the fiction in good of form plane was	and inetic cample and file of the cample and	simpl bour es. orm- i f pow	e applidary Maxwer Re	plication condi	netic field ns. Magi tions-Def quation ii	intensit netic flu inition o
Unit – III  Biot-Savart Law on the axis of a density- Magnet Inductance – Inductanc	Unit Title: Static Magnetic Field and Magnetic in vector form – Magnetic Field intensity due to a fin a circular and rectangular loop carrying a current I - tic Vector Potential – Magnetic moment-Nature of notes and solenoids – Definition of mutual Unit Title: Time Varying Fields and Electrom Displacement current –Maxwell's four equations in it of Wave Equation- Wave equation in Phasor form -F  Unit Title: Uniform Plane Waves  lossless dielectric – Plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence-Polarization - Simulation to find parametric plane waves in lossy dielectrics que incidence plane waves i	ite and infir - Ampere's nagnetic mal inductance agnetic Wantegral form oynting Ve - Propagateters of unit	ite wire carry circuital law aterials -Mag e – simple example example and different ctor and the faction in good of form plane was a McGraw-Hill I ectromagnetic discounts of the simple control of th	and and anetic sample and another and another and another another and another	simple bour bour bour bour bour bour bour bour	e application, 1	plication condi	etic field ns. Magi tions-Def quation in	intensitinetic fluinition of general phase g

<sup>\*</sup>Includes Term Work (TW) & Online / Certification course hours



	SE OUTCOMES: mpletion of the course, the students will be able to	BT <b>M</b> apped (Highest Level)
CO1	determine the electric field intensity and potential for static charge distributions.	Applying (K3)
CO2	apply boundary conditions and derive the capacitance of parallel plate capacitors	Applying (K3)
CO3	calculate the magnetic field intensity and flux density for current carrying conductor	Applying (K3)
CO4	apply Maxwell's equation and obtain the Wave parameters.	Applying (K3)
CO5	compute the characteristics of uniform plane waves in conductor, lossless and lossy dielectric media.	Applying (K3)

### Mapping of COs with POs and PSOs

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2									W.	2	3 3 4 4
CO2	3	3		1				-			-	2	
CO3	3	3								16	1.67 #3	2	
CO4	3	3	2									2	
CO5	3		3									3	6

1 – Slight, 2 – Moderate, 3 – Substantial, BT- Bloom's Taxonomy

### **ASSESSMENT PATTERN - THEORY**

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1		60	40				100
CAT2	. 8	60	40	1 1			100
CAT3		70	30				100
ESE	- Participation of the state of	60	40			_ /1"	100

\* ±3% may be varied (CAT 1, 2 & 3 – 50 marks & ESE – 100 marks)

Signature of the Chairman

ed of Studies - ECE





		24ECT33 - ELECTRO	DNIC DEVIC	CES						
Programm Branch	ne &	B E & Electronics and Communication Engineering	Sem.	Category	L	T	Р	SL*	Total	Credi
Prerequisi	ites	Physics for Electronics Engineering	3	PC	45	0	0	45	90	3
Preamble		To provide the fundamental knowledge for undersapplications	standing the	e concepts of	semi	conc	lucto	r devic	es and	
Unit – I		Semiconductor and Carrier Transport								9
Semicondu process, E	uctor dev instein e	vices: building blocks, Major semiconductor devices equation, current density equation - Generation and	- Carrier d Recombina	rift: mobility, ration: Direct, i	esisti indire	vity - ct, sı	- Car urfac	rier Dif e - Cor	fusion: D	iffusion quation
Unit – II		PN DIODE and BJT:								9
open circui Bipolar Jun amplificatio	ited PN j nction Tr		ode circuits:	clipper and	clamp	ers				
Unit – III		FIELD EFFECT TRANSISTORS:								9
MOSFET: voltage – T	Constru	n, operation and characteristic parameters -Expressiction, operation -Enhancement MOSFET, Depletion ture effects - Body effect - Introduction to MOSFET	n MOSFET	- Effect of o	chann	ent el le	ngth	modul	ation – T	hreshold
MOSFET: voltage – T Unit – IV Zener diod	Constru Tempera de - Tunr	ction, operation -Enhancement MOSFET, Depletio	n MOSFET scaling	– Effect of o	chann	el le				9
MOSFET: voltage – T  Unit – IV  Zener diod Thyristors -	Constru Tempera de - Tunr - SCR, I	ction, operation -Enhancement MOSFET, Depletion turne effects - Body effect - Introduction to MOSFET  SPECIAL SEMICONDUCTOR DEVICES:  nel diode - PIN diode - LASER diode - Avalanche DIAC, TRIAC  Rectifier and Power Supply:	n MOSFET scaling photodiode	- Effect of o	sistor-	el le	) - U	JT - Fi	nFET - M	9 ESFET -
MOSFET: voltage – T  Unit – IV  Zener diod: Thyristors -  Unit – V  Linear mod	Constru Tempera de - Tunr - SCR, I	ction, operation -Enhancement MOSFET, Depletion turne effects - Body effect - Introduction to MOSFET    SPECIAL SEMICONDUCTOR DEVICES: nel diode - PIN diode - LASER diode - Avalanche DIAC, TRIAC	n MOSFET scaling photodiode	- Effect of o	sistor-	el le	) - U	JT - Fi	nFET - M	9 ESFET
MOSFET: voltage – T  Unit – IV  Zener diod: Thyristors -  Unit – V  Linear mod	Constru Tempera de - Tunr - SCR, I de powe	ction, operation -Enhancement MOSFET, Depletion turne effects - Body effect - Introduction to MOSFET  SPECIAL SEMICONDUCTOR DEVICES:  nel diode - PIN diode - LASER diode - Avalanche DIAC, TRIAC  Rectifier and Power Supply:  r supply- Rectifiers: Half wave rectifier, full wave rection to the supply- Rectifiers and Power Supply- Rectifiers.	n MOSFET scaling photodiode	- Effect of o	sistor-	el le	) - U	JT - Fi	nFET - M	9 ESFET
MOSFET: voltage – T  Unit – IV  Zener diod Thyristors -  Unit – V  Linear mod Voltage reg  TEXT BOO	Constru Tempera de - Tunr - SCR, [ de powe	ction, operation -Enhancement MOSFET, Depletion turne effects - Body effect - Introduction to MOSFET    SPECIAL SEMICONDUCTOR DEVICES: nel diode - PIN diode - LASER diode - Avalanche DIAC, TRIAC    Rectifier and Power Supply: r supply- Rectifiers: Half wave rectifier, full wave restricted by the supply- Rectifier in the	photodiode photodiode ctifier, Bridg	- Effect of o	sistor-	LCE	D - U	JT - Fi	nFET - M	9 ESFET 9
MOSFET: voltage – T  Unit – IV  Zener diod. Thyristors -  Unit – V  Linear mod Voltage reg  TEXT BOC  1. S S (Unit – V)	Constru Tempera de - Tunr - SCR, [ de powe gulators: OK: Salaivah Jnits-II, III	ction, operation -Enhancement MOSFET, Depletion turne effects - Body effect - Introduction to MOSFET    SPECIAL SEMICONDUCTOR DEVICES: nel diode - PIN diode - LASER diode - Avalanche DIAC, TRIAC    Rectifier and Power Supply: r supply- Rectifiers: Half wave rectifier, full wave restricted by the supply- Rectifier in the	photodiode ctifier, Bridg yer Supply	- Effect of of - Photo trans se rectifier - F	sistor- ilters:	LCE indu	uctor	JT - Fi	nFET - M	9 ESFET 9 Iters -
MOSFET: voltage – T  Unit – IV  Zener diod Thyristors -  Unit – V  Linear mod Voltage reg  TEXT BOC  1. SS (Ui)  2. SN	Constru Tempera de - Tunr - SCR, [ de powe gulators:  OK: Salaivah Jnits-II,III M Sze, [	ction, operation -Enhancement MOSFET, Depletion turne effects - Body effect - Introduction to MOSFET  SPECIAL SEMICONDUCTOR DEVICES:  nel diode - PIN diode - LASER diode - Avalanche DIAC, TRIAC  Rectifier and Power Supply:  r supply- Rectifiers: Half wave rectifier, full wave rectifier, did wave rectifier, full wave rectifier, supply- Rectifiers: Half wave rectifier, full wave rectifier, full wave rectifier, supply- Rectifiers: Half wave rectifier, full wave rectifie	photodiode ctifier, Bridg yer Supply	- Effect of of - Photo trans se rectifier - F	sistor- ilters:	LCE indu	uctor	JT - Fi	nFET - M	9 ESFET 9 Iters -
MOSFET: voltage – T  Unit – IV  Zener diod Thyristors -  Unit – V  Linear mod Voltage reg  TEXT BOC  1. SS (UI)  2. SN  REFEREN	Constru Tempera de - Tunr - SCR, [ de powe gulators  OK: Salaivah Inits-II, III M Sze, N	ction, operation -Enhancement MOSFET, Depletion turne effects - Body effect - Introduction to MOSFET  SPECIAL SEMICONDUCTOR DEVICES:  nel diode - PIN diode - LASER diode - Avalanche DIAC, TRIAC  Rectifier and Power Supply:  r supply- Rectifiers: Half wave rectifier, full wave rectifier, did wave rectifier, full wave rectifier, supply- Rectifiers: Half wave rectifier, full wave rectifier, full wave rectifier, supply- Rectifiers: Half wave rectifier, full wave rectifie	photodiode photodiode ctifier, Bridg ver Supply ircuits" ,5 <sup>th</sup> e	- Effect of of the contract of	ilters:	LCE indu	uctor	JT - Find the state of the stat	nFET - M litor, LC fi	9 ESFET 9 Iters -

<sup>\*</sup>Includes Term Work (TW) & Online / Certification course hours

	SE OUTCOMES: mpletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	understand the importance of carrier concentration and doping in semiconductors	Understanding (K2)
CO2	Know the characteristics of PN diode and BJT for various conditions	Applying (K3)
CO3	understand the principle of operation of semiconductor devices like JFET, MOSFET	Understanding (K2)
CO4	Understand the characteristics and use specialized semiconductor devices for various applications	Understanding (K2)
CO5	Apply the property of junction diode in rectifiers and regulators	Applying (K3)

				N	lapping	of COs w	ith POs	and PSO	s			-	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	2				1 H				1	2	1
CO2	3	2	2	4							1	2	1
CO3	3	2	2	p 7							1	2	1
CO4	3	2	2	- 1							1_	2	1
CO5	3	3	2	3	3	2	11				2	3	1

1 - Slight, 2 - Moderate, 3 - Substantial, BT- Bloom's Taxonomy

		ASSESSMEN'	T PATTERN	- THEORY			
Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total %
CAT1	*	80	20	,	1 7		100
CAT2	ř	. 80	20			, e <sup>c</sup>	100
CAT3		70	30				100
ESE		70	30			977	100

\* ±3% may be varied (CAT 1, 2 & 3 – 50 marks & ESE – 100 marks)

Signature of the Chairman
Board of Studies - ECE



	24GET31- UNIV (Common to All Engine					129			
Programme & Branch	All B.E & B.Tech Branches	Sem.	Category	L	T	P	SL*	Total	Credit
Prerequisites	Nil.	3/6	HS	30	0	0	30	60	0
At a series of	on to an about the greation of					de to			
Preamble	To make the student to know what t	hey 'rea	ally want to	be' in	their	life a	nd profess	ion, unde	erstand the
	meaning of happiness and prosperit	ty for a	human bein	g. Als	so to	acilita	te the stud	dents to u	ınderstand
	about harmony at all the levels of hu	ıman liv	ing, and live	e acc	ording	gly			
Unit – I	Introduction						2 9	19-6	6
of self-Exploration Basic Human A	Guidelines of Value Education – Content on – Content and Process of Self explo Aspirations – Continuous Happiness of Fulfillment of Human Aspirations – Re	oration - and Pro	– Natural A osperity – E	ccept Explo	ance ring I	– Rea Tappii	alization an ness and	nd Under Prosperit	standing - ty – Basi
Unit – II	Harmony in the Self and Body					18			6
Human Being a	nd Body - Understanding Myself as C	o-exist	ence of Se	lf ('l')	and	Body,	Needs of	the Self	and Body
Activities in the	Self and Body, Self ('I') as the Conscious	us Entity	y, the Body	as th	e Mat	erial E	ntity – Ex	ercise – E	Body as ar
Instrument Har	mony in the Self ('I) - Understanding N	Augolf					-		
motiument– nat	mony in the Sell (1) - Onderstanding is	nysen –	· Harmony w	/ith B	ody.				
Unit – III	Harmony in the Family and Socie		Harmony w	/ith B	ody.	Mo		1 H EL	6
Unit – III		ty		1-62		lation	ship from	Family to	
Unit – III Harmony in the	Harmony in the Family and Socie	<b>ty</b> in Huma	an Relations	1-62		lation	ship from	Family to	
Unit – III Harmony in the Identification of I	Harmony in the Family and Socie Family – Justice – Feelings (Values)	<b>ty</b> in Huma nan Enc	an Relations	1-62		lation	ship from	Family to	
Unit – III Harmony in the Identification of I Unit – IV Order of Nature	Harmony in the Family and Societies Family – Justice – Feelings (Values) in Human Goal – Five dimensions of Human Goal – Nature and Existence – Interconnectedness – Understanding	ty in Huma nan Ence ng the F	an Relations deavour.	ships - Inna	- Re	ss – N	Natural Ch	aracterist	Society -  6  tic – Basic
Unit – III Harmony in the Identification of I Unit – IV Order of Nature Activity – Conformation	Harmony in the Family and Socie Family – Justice – Feelings (Values) is Human Goal – Five dimensions of Hum Harmony in Nature and Existence – Interconnectedness – Understandir rmance – Introduction to Space – Co–	ty in Huma nan Ence ng the F	an Relations deavour.	ships - Inna	- Re	ss – N	Natural Ch	aracterist	Society -  6  tic – Basic
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Unit – III Harmony in the Identification of I Unit – IV Order of Nature Activity – Confor No–activity – Ex Unit – V	Harmony in the Family and Socie Family – Justice – Feelings (Values) is Human Goal – Five dimensions of Hum Harmony in Nature and Existence – Interconnectedness – Understandir rmance – Introduction to Space – Co- istence is Co-existence. Implications of the above Holistic Professional Ethics	ty in Huma nan End e ng the F existen c Under	an Relation: deavour. our order - ce of units o	ships Inna of Spa	– Reatene	ss – N Limite	Natural Ched and un	aracterist	6 tic – Basic Active and
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<sup>\*</sup>includes Term Work(TW) & Online / Certification course hours

	E OUTCOMES: pletion of the course, the students will be able to	BT Mapped (Highest Level)
CO1	identify the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society	Applying (K3)
CO2	interview between the Self and the Body, understand the meaning of Harmony in the Self, the Co–existence of Self and Body	Applying (K3)
CO3	build harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society	Applying (K3)
CO4	experiment with themselves to co-exist with nature by realising interconnectedness and the four orders of nature	Applying (K3)
CO5	identify the differences between ethical and unethical practices, and apply ethical and moral practices for a better living	Applying (K3)

# Mapping of COs with POs and PSOs

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	2	2	L 11 ==	1	2	16		<i>y</i> 1 -	2	3	2
CO2	3	2	2	2		1	2	LK 1 TENS	e rezeli.	Le sessions	2	3	2
CO3	3	2	2	2		1	2	1	7.5	- 61	2	3	2
CO4	3	2	2	2		1	2			- 1	2	3	2
CO5	3	2	2	2	e ence	1	2			- Ocsi-	2	3	2

1 – Slight, 2 – Moderate, 3 – Substantial, BT- Bloom's Taxonomy

## **ASSESSMENT PATTERN – THEORY**

Test / Bloom's Category*	Remembering (K1) %	Understanding (K2) %	Applying (K3) %	Analyzing (K4) %	Evaluating (K5) %	Creating (K6) %	Total
CAT1		80	20			टचे अनुनामाः र	100
CAT2	7 41 7 144	80	20	rpigare in right	in the second of the	n 2	100
CAT3		80	20				100
ESE	6		1	۱A			

\* ±3% may be varied (CAT 1, 2 & 3 – 50 marks)

SA

Signature of the Chairman

Board of Studies -





Programme & All BE Branch			ech Bran	ches		Sem.	Categor	y L	Т	P	SL*	Total	Credit		
Prerec	quisites	Nil		1		3	PC	0	0	30	0	30	1		
Pream	ble	To design	n and imp	lement comb	binational & sec	uential log	ic circuite			9					
10 00 5 500		MENTS / EXI			omational & sec	quential logi	c circuits.	9							
1.		on of digital le				The second second second									
2.	Design a	Design and Implementation of Combinational Circuits using logic gates													
3.	Design and Implementation of 4-bit adder/subtractor using MSI device.														
4.	Design and implement a function using multiplexers and decoders.														
5.	Design and implement BCD adder using MSI devices.														
6.	Design and implement BCD adder using MSI devices.  Design and implement BCD to seven segment display decoder.														
7.															
10. DO	Verification of flip flops.														
8.	Design and implement shift registers.														
				an an anna Vena ana											
9.	Design a	nd implemen	t a MOD-	n counter usi	ing JK Flip Flop	).					7.00	*			
					ing JK Flip Flop		v					×	,		
9. <b>REFE</b>	RENCES/ N	nd implemen  IANUAL /SO  ry Manual			ing JK Flip Flop								,		
REFE	RENCES/ N	IANUAL /SC ry Manual			ing JK Flip Flop										
REFE	RENCES/ N Laborato	IANUAL /SO ry Manual	FTWARE								(1)	BT Mapp			
REFEI 1. COUR On co	RENCES/ M Laborato	IANUAL /SC ry Manual IMES: f the course	FTWARE	: lents will be								<b>lighest L</b> Applying (	<b>evel)</b> (K3),		
REFEI  1.  COUR On co	RENCES/ M Laborato	IANUAL /SC ry Manual IMES: f the course onstruct and	, the stud	lents will be	e able to circuits using log	gic gates					1	Highest L Applying ( Precision Applying (	evel) (K3), (S3) (K3),		
REFEI  1.  COUR On co  CO1  CO2	RENCES/ M Laborato RSE OUTCO Impletion of design, of design, of	IANUAL /SC ry Manual  MES:  f the course  onstruct and	, the stud verify cor	lents will be mbinational c	e able to circuits using log circuits using M	gic gates SI devices					, I	Highest L Applying ( Precision Applying ( Precision	(K3), (S3) (K3), (K3), (S3)		
REFEI  1.  COUR On co  CO1  CO2	RENCES/ M Laborato RSE OUTCO Impletion of design, of design, of	IANUAL /SC ry Manual  MES:  f the course  onstruct and	, the stud verify cor	lents will be mbinational c	e able to circuits using log	gic gates SI devices						Highest L Applying ( Precision Applying (	(K3), (S3) (K3), (S3) (K3), (K3),		
REFEI  1.  COUR On co  CO1	RENCES/ M Laborato RSE OUTCO Impletion of design, of design, of	IANUAL /SC ry Manual  MES:  f the course  onstruct and	, the stud verify cor	lents will be mbinational combinational comb	e able to circuits using log circuits using M	gic gates SI devices	I PSOs					Highest L Applying ( Precision Applying ( Precision Applying (	(K3), (S3) (K3), (K3), (S3)		
REFEI  1.  COUR On co  CO1  CO2  CO3	RENCES/ M Laborato RSE OUTCO Impletion of design, of design, of design, of	MES: f the course onstruct and onstruct and	, the stud verify cor	lents will be about the mbinational combinational cential circuits	e able to circuits using log circuits using Managers	gic gates SI devices		PO9	PO10	)   P		Highest L Applying ( Precision Applying ( Precision Applying (	(K3), (S3) (K3), (S3) (K3), (S3) (K3), (S3)		
REFEI  1.  COUR On co  CO1  CO2	RENCES/ M Laborato RSE OUTCO Impletion of design, of design, of design, of	MES: f the course onstruct and onstruct and	, the stud verify cor verify cor test sequ	lents will be about the mbinational combinational cential circuits	e able to circuits using log circuits using Miss using flipflops coing of COs with PO5 PO6 2	gic gates SI devices th POs and		PO9 2	PO10	) P	1	Applying ( Precision Applying ( Precision Applying ( Precision Applying ( Precision	(K3), (S3) (K3), (S3) (K3), (S3) (K3), (S3)		
REFEI  1.  COUR On co CO1 CO2 CO3	RENCES/ M Laborato RSE OUTCO Empletion of design, of de	MES: f the course onstruct and onstruct and onstruct and	, the stud verify cor verify cor test sequ	lents will be about the mbinational combinational cential circuits	e able to circuits using log circuits using Miss using flipflops using of COs with	gic gates SI devices th POs and	PO8		PO10	)   P	1	Applying ( Precision Applying ( Precision Applying ( Precision Applying ( Precision	(K3), (S3) (K3), (S3) (K3), (K3),		

Signature of the Chairman



				2	4ECL32 -	- ELECTI	RONIC D	EVICES L	ABORAT	ORY	-				
Progra Brancl			BE ELEC ENGINEE		AND CC	OMMUNIC	ATION	Sem.	Catego	ry L	Т	P	SL*	Total	Credit
Prerec	quisites	s	Nil					3	BS	0	0 .	30	0	30	1
Pream	ble	*	To desig	n a simp	le circuit	using se	micondu	ıctor devi	ces		*				
LIST C	OF EXP	ERIME	NTS / EXE	RCISES	:				SHEET						
1.	Char	racterist	ics of PN	Junction [	Diode.						I.				
2.	Design a clipper and clamper circuits using PN junction diode.														
3.	Input and Output characteristics of Common Emitter configuration														
4.	Zener diode characteristics and Zener as a Regulator														
5.	Drain current and Transfer Characteristics of MOSFET												-		
6.	DIAC and TRIAC Characteristics														
7.	Characteristics of UJT												K)		
8.	Characteristics of SCR												-		
9.	Half wave Rectifier and Full wave rectifier with and without filter														
10.	i) Ch		ulation: istics of Coristics of J		ollector c	onfiguration	on of BJT								
REFE	RENCE	S/ MAI	NUAL/SO	FTWARE	i:										
1.	Labo	pratory i	manual	,					**				- 1		
2.	Orca	ad Cade	ence PSPI	CE softwa	are 16.6	a.									
		JTCOMI	ES: ne course	, the stud	lents will	l be able	to						(1	BT Map	
CO1	demonstrate the characteristics of different electronic devices such as PN diode, BJT, JFET, SCR  Applying (K3), Precision (S3)														
CO2		struct va		uits (Clipp	er, Clamp	oer, Half v	vave recti	fier and F	ull wave re	ctifier w	ith and	i		Applying Precision	(K3),
CO3			imple appl	ication us	ing semi	conductor	devices	=	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					Applying Precision	(K3),
-			(6)		Ma	apping of	COs wit	h POs an	d PSOs		-			2	3
COs/F	POs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	P01	0 F	PO11	PSO1	PSO2
СО	1	3	2	. 2	2		2	2	2	2			2	2	
СО	2	3	2	2	2		2	2	2	2			2	2	
СО	3	3	2	2	2		2	2	2	2			2	2	2

Signature of the Chairman
Beard of Studies - ECE

