## SONA COLLEGE OF TECHNOLOGY, SALEM-5

(An Autonomous Institution)

# B.E- CSE( Artificial Intelligence and Machine Learning)

## **CURRICULUM and SYLLABI**

[For students admitted in 2023-2024]

**B.E / B.Tech Regulations 2023** 

Approved by BOS and Academic Council meetings

## Sona College of Technology, Salem (An Autonomous Institution)

## Courses of Study for B.E/B.Tech. Semester I under Regulations 2023 (CBCS)

Branch: BE Computer Science and Engineering (Artificial Intelligence and Machine Learning)

S.No	Course Code	Course Title	L	Т	P	J	С	Category	Total Contact Hours  60  75  45  45  45  30  30	Course Type*
i .	Y-sal I	Theory Course	S			T.				
1.	U23ENG101A	Communication Skills in English	2	0	2	0	3	HS	60	TL
2.	U23MAT102A	Linear Algebra and Calculus with MATLAB	3	0	2	0	4	BS	75	TL
3.	U23PHY103B	Engineering Physics	3	0	0	0	3	BS	45	T
4.	U23PPR105	Problem Solving using Python Programming	3	0	0	0	3	ES	45	T
5.	U23EGR107	Engineering Graphics	3	0	0	0	3	ES	45	T
6.	U23TAM101	தமிழர் மரபு / Heritage of Tamils	1	0	0	0	1	HS	15	Т
7.	U23GE101	Basic Aptitude-I	2	0	0	0	0	AC	30	T
		Practical Cour	ses			÷ -				
8.	U23PHL110	Engineering Physics Laboratory	0	0	2	0	1	BS	30	L
9.	U23PPL112	Python Programming Laboratory	0	0	2	0	1	ES	30	L
		The same of the sa	otal				19			
	×	Optional Language Co	ours	es**						
10.	U23OL1101	French					-		15	T
11.	U23OL1102	German	1	0	0	0	1	OL	15	T
12.	U23OL1103	Japanese		0			1	OL	15	T
13.	U23OL1104	Korean							15	T

<sup>\*</sup>T- Theory, TT- Theory with Tutorial, TL- Theory with Laboratory, TP- Theory with Project, TLP- Theory with Laboratory and Project, L-Laboratory, LT- Laboratory with Theory, LP- Laboratory with Project

<sup>\*\*</sup>Students may opt for foreign languages viz., German/French/Japanese/Korean with additional one credit (Not accounted for CGPA calculation)

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AD	pro	ved	BA

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Chairperson, Science and Humanities BoS	Chairperson, CSE BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr.M.Renuga	Dr B.Sathiyabhama	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil Kumar

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**B.E/B.Tech Regulations-2023** 

04.08.2023

## Sona College of Technology, Salem

#### (An Autonomous Institution)

Courses of Study for B.E/B.Tech. Semester II under Regulations 2023 (CBCS)

Branch: BE Computer Science and Engineering (Artificial Intelligence and Machine Learning)

S.No	Course Code	Course Title	L	Т	P	J	С	Category	Total Contact Hours	Course Type*
	17.	Theory	cour	ses						
1.	U23ENG201A	Technical English	2	0	0	0	2	HL	30	Т
2.	U23MAT202D	Discrete Mathematics	3	1	0	0	4	BS	60	TT
3.	U23CHE204C	Applied Chemistry	2	0	0	0	2	BS	30	Т
4.	U23CPR205	Programming in C	3	0	0	0	3	ES	45	Т
5.	U23BEE206B	Basics of Electrical and Electronics Engineering	3	0	0	0	3	ES	45	Т
6.	U23EC203	Digital Principles and System Design	3	0	0	0	3	PC	45	T
7.	U23TAM201	தமிழரும் தொழில்நுட்பமும்/ Tamils and Technology	1	0	0	0	1	HS	15	T
8.	U23GE201	Basic Aptitude- II	2	0	0	0	0	AC	30	T
		Practica	l cou	irses						
9.	U23CPL212	C Programming Laboratory	0	0	2	0	1	ES	30	L
10.	U23CHL211	Chemistry Laboratory	0	0	2	0	1	BS	30	L
11.	U23BEEL213B	Basics of Electrical and Electronics Engineering Laboratory	0	0	2	0	1	ES	30	L
1			otal				21			
		Optiona	al La	ngu	age (	Cour	ses**			
	U23OL1201	French - II							15	Т
	U23OL1202	German - II				3.5		OI.	15	Т
12	U23OL1203	Japanese - II	1	0	0	0	1	OL	15	Т
	U23OL1204	Korean - II							_ 15	Т
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<sup>\*</sup>T- Theory, TT- Theory with Tutorial, TL- Theory with Laboratory, TP- Theory with Project, TLP- Theory with Laboratory and Project, L-Laboratory, LT- Laboratory with Theory, LP- Laboratory with Project

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Approved By	Man	hivakimen	T DUND Z	
Chairperson, Science and Humanities BoS	Chairperson, CSE BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr.M.Renuga	Dr B.Sathiyabhama	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil Kumar

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## Sona College of Technology, Salem (An Autonomous Institution)

## Courses of Study for B.E/B.Tech. Semester I under Regulations 2023 (CBCS)

Branch: BE Computer Science and Engineering (Artificial Intelligence and Machine Learning)

S.No	Course Code	Course Title	L	Т	P	J	С	Category	Total Contact Hours  60  75  45  45  45  30  30	Course Type*
i .	Y-sal I	Theory Course	S			T.				
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3.	U23PHY103B	Engineering Physics	3	0	0	0	3	BS	45	T
4.	U23PPR105	Problem Solving using Python Programming	3	0	0	0	3	ES	45	T
5.	U23EGR107	Engineering Graphics	3	0	0	0	3	ES	45	T
6.	U23TAM101	தமிழர் மரபு / Heritage of Tamils	1	0	0	0	1	HS	15	Т
7.	U23GE101	Basic Aptitude-I	2	0	0	0	0	AC	30	T
		Practical Cour	ses			÷ -				
8.	U23PHL110	Engineering Physics Laboratory	0	0	2	0	1	BS	30	L
9.	U23PPL112	Python Programming Laboratory	0	0	2	0	1	ES	30	L
		The same of the sa	otal				19			
	×	Optional Language Co	ours	es**						
10.	U23OL1101	French					-		15	T
11.	U23OL1102	German	1	0	0	0	1	OL	15	T
12.	U23OL1103	Japanese		0			1	OL	15	T
13.	U23OL1104	Korean							15	T

<sup>\*</sup>T- Theory, TT- Theory with Tutorial, TL- Theory with Laboratory, TP- Theory with Project, TLP- Theory with Laboratory and Project, L-Laboratory, LT- Laboratory with Theory, LP- Laboratory with Project

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**B.E/B.Tech Regulations-2023** 

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CO1	l:	Use gramı	natical	compoi	nents e	effectivel	y in bo	th writte	en and	spoken	commu	nicatio	n	
CO	2:	Develop s	peaking	skills f	or self	-introdu	ction, c	leliverir	ng speed	ches and	d techni	cal pre	sentatio	n
CO	3:	Demonstra	ate effec	tive lis	tening	skills fo	r acade	mic and	profes	sional p	urpose	S		
CO	4:	Write ema	ils and	formal	letters	and bui	ld resu	mes and	constr	uct para	graphs			
COS	5:	Develop s	peaking	skills l	oth in	terms o	f fluenc	y and c	ompreh	ensibili	ity			
Pre-re	quisi	ite:												
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	•	Fundamen	ital Lan	guage S	Skills (	LSRW)								
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	PO		PO3	PO4	PO5		PO7	PO8	P09		PO11			PSO
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CO2	1	1	1	1	1	3	3	3	3	3	3	3	3	3
СОЗ	1	2	3	2	2	3	3	2	3	3	3	3	3	3
CO4	1	2	1	2	2	3	3	3	3	3	3	3	3	3
CO5	1	2	2	3	2	3	3	3	3	3	3	3	3	3
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		t/seminar/	Quiz (5	)	1	marks)						T		-
Init 01	:												6 Hour	:S

- Email, fixing an appointment, cancelling appointments, conference details, hotel accommodation, order for equipment, training programme details, paper submission for seminars and conferences
- Paragraph writing Describing defining providing examples or evidences

#### Tenses, Sentence Patterns Instructions Letter Writing - calling for quotations, placing orders Unit 03: 6 Hours Prefixes and Suffixes Cover letter and resume writing Unit 04: 6 Hours Modal verbs, concord Checklist Letter Writing - Business communication, complaints, replies to queries from business customers Unit 05: 6 Hours If conditionals Letter Writing - inviting dignitaries, accepting and declining invitations Lab component: 1. Self-introduction, personal information, name, home background, study details, area of interest, hobbies, strengths and weaknesses, projects and paper presentations, likes and dislikes in food, travel, clothes, special features of home town. 2. Mini presentation - Office Arrangements, Facilities, Office Functions, Sales, Purchases, Training Recruitment, Advertising, Applying for financial assistance, applying for a job. 3. Listening - understanding short conversations or monologues, taking down phone messages, orders, notes, etc. 4. Listening – entering information in tabular form 5. Loud Reading Theory: 30 Hrs Tutorial: --Practical: 30 hours-Project:--Total Hours: 60 Hrs **TEXT BOOKS** Technical English I & II, Dr. M. Renuga et al. Sonaversity, 2016 **Extensive Reading** 1. She is Dancing Back to Life – A Short Story" 2. The Story of Google - Sara Gilbert, published by Jaico 3. The Story of Amazon.com- Sara Gilbert, published by Jaico **REFERENCES** Norman Whitby, Business Benchmark – Pre-Intermediate to Intermediate, Students Book, Cambridge University Press, 2006. 2. A Course in Communication Skills, P. Kiranmai Dutt, Geetha Rajeevan, C. L. N. Prakash, published by Cambridge University Press India Pvt. Ltd.

Dr. M.RENUGA,
Professor & Head,
Department of Humanities & Languages,
Sona College of Technology,
SALEM - 6"

6 Hours

Unit 02:

-		B. I	E. CSE	(ARTI	FICIA	LINT	ELLI	GENCI	E ANI	) MAC	HINE	LEARN	VING)	-	
SEM	ESTE											L	T P	J	C
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Cours	e Outo	comes		****				·					0 2	0	14
At the	end o	f the co	urse, th	e stude	nt will l	be able	to								
CO1	: fin	d the ra	nk of the	matrix	and sol	ve line	ar syste	m of eq	uations	by direc	et and in	direct m	ethods		
CO2			concepts											(K)	
CO3	: app	oly the o	concepts											nalize t	he
CO4	ma	trix.													
COS	: apr	oly the a	aylor's se appropria	ate techi	niques o	f multi	nle inte	orals to	find th	nd minir	na of fu	nctions	of two v	ariables	1.
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COs	PO1	PO2	PO3	Progra PO4	PO5	PO6	(POs) as	PO8	P09	PO10	PO11	(PSOs) PO12	PSO1	PSO2	PSO:
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CO2	3	3		3	2							2	2	2	3
CO3	3	3		3	2							2	2	2	3
CO4	3	3		3	2							2	2	2	3
CO5	3	3		3	2							2	2	2	3
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CIE tes CIE tes CIE tes Attenda	t II (16 t III (1 t IV (1 ance (5		ory) ory)	)	Seme	ester Er E- Theo		s nination + Lab(1			(	Course e	nd surve	гу	
nit 01			YSTEM		QUATI	ONS			•			T	9	Hours	
	f a ma	trix – s	olution o	of linear			uations	by matr	ix metl	nod, Gau	ıss elim	ination,	Gauss-J	ordan, (	Gauss-
nit 02	VE	CTOR	SPACES	S									9	Hours	
			r indeper							dimens	ion – lir	near tran	sformat	ions (m	aps) –
nit 03			LUES A						-F.				9	Hours	
			nvectors eal symr				perties	of eigen	values	and eige	envector	s – Cay			eorem

Jnit 04	MULTIVARIABLE CALCULUS	S	_ *		9 Hours
two va	ons of several variables – partial differ ariables – maxima and minima of fu a by Lagrange's method of undetermin	nctions of two variable			
Jnit 05	MULTIPLE INTEGRALS				9 Hours
	e integrals – change of order of integr integrals in Cartesian coordinates – tri				
		List of MATLAB Pro	ograms		
1.	Programs based on elementary ope	erations on matrices			
2.	Computing the rank of a matrix				
3.	Finding eigenvalues and eigenvect				
4.	Finding partial derivatives of function	tions of several variab	oles	-	
5.	Computing stationary points of fur	nctions of two variabl	es		
-6.	Taylors series expansion of function	ons of two variables			
7.	Evaluating double integrals				1
8.	Finding area as double integrals				
9.	Evaluating triple integrals				
10.	Finding volume as triple integrals				
Theor	y: 45 Hrs Tutorial: -	Practical: 30 Hrs	Project:	Total Ho	ours: 75 Hrs
TEXT	BOOKS:				
1.	T. Veerarajan, "Linear Algebra and F	Partial Differential Equa	ations", McGraw	Hill Publish	ers, 1 <sup>st</sup> Edition, 2018.
2.	T. Veerarajan, "Engineering Mathem	natics for Semesters I &	II", McGraw Hil	l Publishers,	1 <sup>st</sup> Edition, 2019.
3.	MATLAB", CRC Press Publishers, 1	I. C. Kim, H. J. Kim an state Edition, 2017.	d T. lm, "Engine	ering Mathe	matics with
REFE	ERENCE BOOKS:			th E tree	010
1.	S. Lipschutz and M. L. Lipson, "Line	ear Algebra", McGraw	Hill Publishers, 6	Edition, 20	018.
2.	E. Kreyszig, "Advanced Engineering	Mathematics", Wiley	Publishers, 10 <sup>th</sup> E	dition, Repr	int, 2017.
3.	C. Prasad and R. Garg, "Advanced E	Ingineering Mathematic	s", Khanna Publi	shers, 1° Ed	ition, 2018.
4.	B. V. Ramana, "Higher Engineering	Mathematics", McGrav	w Hill Publishers,	29" Reprin	t, 2017.
5.	B. S. Grewal, "Higher Engineering N	Mathematics", Khanna l	Publishers, 44 <sup>th</sup> Ec	ition, 2018.	dition 2020
6.	D. Xu, "Calculus problem solutions	with MATLAB", Walte	er de Gruyter Pub	lishers, I" E	dition, 2020.

Dr. S. JAYABHARATHI

Head / Department of Mathematics Sona College of Technology Salem - 636 005

Dr. S. JAYABHARATHI Bos Dasagia To Professor & Head DEPARTMENT OF MATHEMATICS,

SONA COLLEGE OF TECHNOLOGY, SALEM-636 005. Tamilnadu. Ph: 0427 - 4099999.

Dr. M. RENUGA BoS - Chairperson

Science and Humanities Sona College of Technology

Salem - 636 005 Dr. M. RENUG

B.E./B.Tech Regulations 2023

Department of Humanities & Languages, Sona College of Technology, SALEM - 636 005.

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U2	23PH	Y103B				EERIN(			CE)	L	T	P	J	C
			(0	ommo	n to C	CSE, CS	D, AIN	IL & E	CE)	3	0	0	0	3
Cours	se Ou	comes												
At the	e end	of the cou	rse, the	studer	ıt will	be able	to							
CO	l:	Analyse th	e relati	on betw	een ar	rangeme	ent of at	oms an	d mater	rial prop	erties.			
CO	2: ]	Discuss the	e dual n	ature o	f matte	er and ra	diation	and the	applica	ation of	wave n	ature of	partic	les.
CO	3: 1	Describe the	he basic	compo	nents	of lasers					·			
CO4	4: I	Differentia	ite the e	lectrica	l and t	hermal c	conduct	ivity of	metals				-	
CO	5: l	Elucidate t	he class	sificatio	n and	theory o	f semic	onducti	ng mat	erials				
Pre-re	quisi	te:												
	F	Basic know	vledge i	n atom	ic phy	sics and	optics.							
						CO/PO,	PSO M	lapping	}					
		(3/2	/1 indic	ates the	e stren	gth of co	rrelatio	n) 3-Sti	rong, 2-	Mediun	n, 1-We	ak		
COs		Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)												
COS	PO1	PO2	PO2 PO3 PO4 PO5 PO6 PO7 PO8 P09								PO11	PO12	PSO1	PSC
CO1	3	2	-	-	-	2	2	•	2		3			
CO2	3	2	-	-	-	2	2	-	-	2	•	2	-	3
соз	3	2			-	2	2	-	-	2	•	2		3
CO4	3	2		-	_	2	2	-	-	2	-	2	-	3
CO5	3	2	-	-	- *	2	2	-	-	2	· we	2	-	3
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CIE te	st II (8	3)			- 1	Attendar					Con	E	J C	
CIE te		II (8) Total CIE: 40 marks											d Surve	У
Assign	nment	/Seminar/	Quiz (5	)		Semester	End E	xamina	tion (60	)				
		STAL P											9 Hou	
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imperfections - Point, line and surface defects - Burger vector.

#### Unit 02: OUANTUM PHYSICS

9 Hours

Limitations of classical theory - Dual nature of matter and radiation - Compton effect - Expression for Compton shift (no derivation) - de Broglie waves - Heisenberg's Uncertainty principle - Schrodinger's time independent and time dependent wave equations - Physical significance of wave function - Energy and wave function of an electron trapped in one dimensional box - Application of wave nature of particles - Electron microscope - Comparison of optical and electron microscope - Scanning electron microscope - Limitations of electron microscope.

#### Unit 03: LASERS

9 Hours

Energy level - Stimulated absorption - Population inversion - Meta stable state - Spontaneous emission - Stimulated emission - Basic *components* of a laser - Einstein's theory of spontaneous and stimulated emission of radiation - Types of lasers - Solid state laser - Nd:YAG laser - Gas laser - CO<sub>2</sub> laser - Semiconductor laser - Homojunction and hetero junction laser - Holography - Construction and reconstruction of hologram - Application of laser in industry - Cutting, welding and drilling - Medical applications - Lasik.

#### Unit 04: CONDUCTING MATERIALS

9 Hours

Basic definitions - Classical free electron theory of metals - Expression for electrical conductivity and thermal conductivity - Wiedemann Franz law - Lorentz number - Drawbacks of classical free electron theory - Quantum theory - band theory of solids (qualitative treatment only) - Fermi energy and Fermi distribution function - Effect of temperature on Fermi function - Density of energy states - Carrier concentration in metals.

#### Unit 05: SEMICONDUCTING MATERIALS

9 Hours

Intrinsic semiconductors - Energy band diagram - Direct and indirect band gap semiconductors - Carrier concentration in intrinsic semiconductors - Fermi level - Variation of Fermi level with temperature - Electrical conductivity - Band gap determination - Extrinsic semiconductors - Carrier concentration in n-type and p-type semiconductors (Qualitative Treatment only) - Variation of Fermi level with temperature and impurity concentration - Hall effect - Determination of Hall coefficient - Applications.

Theory: 45 Hrs Tutorial: -- Practical: -- Project:-- Total Hours: 45 Hrs

#### **TEXT BOOKS**

- 1. M.N. Avadhanulu, P.G. Kshirsagar, "A Textbook of Engineering Physics", S.Chand & Company Ltd, New Delhi 2014.
- 2. D. K. Bhattacharya, Poonam Tandon "Engineering Physics", Oxford University Press 2017.

#### REFERENCES

1. "Engineering Physics", Sonaversity, Sona College of Technology, Salem, Revised Edition 2018.

B. K. Pandey and S. Chaturvedi, "Engineering Physics", Cengage Learning India Pvt. Ltd., Delhi, 2021.
 V. Raghavan, "Materials Science and Engineering: A First Course" Prentice Hall India Learning Private Limited, 6<sup>th</sup> Edison, 2015.
 William D. Callister Jr., David G. Rethwisch, "Callister's Materials Science and Engineering", 10th Edition, Global Edition 2019.
 R.Wolfson, "Essential University Physics", Volume 1 & 2. Pearson Education (Indian Edition), 2009.

Chul

Professor of Physics
Head, Department of Sciences
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Dr. M.RENUGA,
Professor & Head,
Department of Humanities & Languages,
Sona College of Technology,
SALEM - 636 DOZ

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		equipment												
CC	)2:	Access, pr	ocess ar	nd analy	yse scie	entific in	nformat	ion.	~			-,		
CC	)3:	Solve prob	olems in	dividua	lly and	collabo	orativel	y.					1	
	requisile bure	ite: Capabl	e of usi	ng Scre	ew gau	ge, Ven	nier call	liper, Tr	ravellin	g micro	scope, S	Spectro	meter, a	ible to
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		(3/2	2/1 indic	ates the	e stren	gth of co	orrelatio	on) 3-Str	rong, 2-	-Mediun	n, 1-We	ak		
COs		CONTRACTOR	Victoria de la constitución de l	27. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	Total Control Control		7	7		ific Out	-			
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CO1	3	2		1		1			1					2
CO2	3	2		1		1			1					2
CO3	3	2		1		1		1.0	1					2
				Designation and the	Cou	ırse Ass	essmer	nt meth	ods	Seylo Bases on				
					Direc	t						Ind	irect	
CIE	test I (	15)			F	RTPS (1	0)	ε .					-	
Quiz	1 (5)				F	Record (	10)							
CIE	test II	(15)			ו	Total CI	E:60 m	arks			C	ourse e	nd surv	/ey
Quiz	2 (5)				S	Semester	r End E	xaminat	tion (40	) marks)				
LIST	OFI	EXPERIM	ENTS										-	
1	appar													
2	interfe	mination of erometer.										quid usi	ng ultra	asonic
3		mination o						ising Ca	rey Fo	ster's br	idge.			
4		mination o												
5	Deter	mination o	f particl	e size c	of lycop	odium	powder	using d	liode la	ser.				-

6	Determination of acceptance angle and numerical aperture of an optical fibr	re using diode laser.
7	Determination of Wavelength of Mercury spectrum using spectrometer.	
8	Determination of band gap of the given semiconductor diode.	
		TOTAL: 30 HOURS

Chall

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				PRO	<b>DBLEN</b>		LVING			HON	L	T	P	J	C
U	23P	PR10	)5				GRAM								
				(Comm			SE, CSE(AII CH and M			ME, ECE,	3	0	0	0	3
Cours	e Oı	utcor	nes												
At the	end	l of t	he cou	rse, the	studen	t will	be able	to							
CO <sub>1</sub>	:	Dev	elop al	gorithn	nic solu	tions	to simple	compi	ıtationa	l probl	ems				
CO	2:	Wri	ite simp	le Pyth	on prog	grams							***		
CO	3:	Wri	ite prog	rams w	ith the	vario	us contro	ol staten	nents ar	nd hand	lling str	ings in	Python		
CO	1:	Dev	elop Py	ython p	rogram	s usir	g function	ons and	files					***************************************	
CO	5:	Ana	alyze a	problen	n and u	ise apj	propriate	e data si	ructure	s to sol	ve it.				
Pre-re	quis	site:	NIL										-		
							COMO	DCO N							etige in a
			(3/2)	/1 indic	ates the		CO/PO,				Mediur	n, 1-We	ak		
<b>CO</b>			I	Progran	nme Oı	utcom	es (POs)	and Pro	ogramn	ne Spec	ific Out	comes (	PSOs)		
COs	PC	01	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12	PSO1	PSC
CO1	2	2	2	3	1	1									1
CO2	2	-	2	3	1	1					100				1
CO3	2		2	3	1	1									1
CO4 CO5	2		2	3	1	1									1
COO		-		0	-		urse Ass	sessmer	nt meth	ods					1
					Ī	Direct							Indir	ect	
CIE te	est I (	(8)					Objectiv	es Test	(6)		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				
CIE te						- 1	Attenda		,						
CIE te	est II	I (8)					Total CI	E: 40 m	arks			Cot	urse end	d surve	y
Assig	nme	nt/se	eminar/0	Quiz (5)	)		Semeste	r End E	xamina	tion (60	))				
Jnit 01	l: AL	GO	RITHM	IIC PRO	OBLEM	1 SOL	VING						T	9 Hour	rs
Need	for	com	nuter l	anguag	es Alo	orithr	ns, build	ling blo	ocks of	algorit	hms (st	atemen	ts state	contr	ol
			_	-	_		flow ch	_		_					
				-			lgorithm	_	_			,, 0		•	
Jnit 02	2: BA	SIC	S OF P	YTHO	N PRO	GRAN	MING						T	9 Hou	rs
Introd	lucti	on-P	ython	Interpre	eter-Int	eractiv	ve and s	cript m	ode -V	alues a	nd type	es, vari	ables, c	perato	rs,
-				-			operators trings, in		-	_			input	functio	n,
Jnit 03	3: CC	TNC	ROL ST	ГАТЕМ	IENTS	AND	STRING	GS			1:			9 Hour	rs
	-						ed condi		if-elif-e	lse). Ite	ration-w	vhile, fo	or, infin		



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break, continue, pass, else. Strings-String slices, immutability, string methods and operations.

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SALEM-636 005

#### Unit 04: FUNCTIONS, FILES AND MODULES

9 Hours

Functions - Introduction, inbuilt functions, user defined functions, passing parameters - positional arguments, default arguments, keyword arguments, return values, local scope, global scope and recursion. Files -Text files, reading and writing files. Modules - create - import.

#### Unit 05: DATA STRUCTURES: LISTS, SETS, TUPLES, DICTIONARIES

9 Hours

Lists-creating lists, list operations, list methods, mutability list functions, searching and sorting, Sets-creating sets, set operations. Tuples-Tuple assignment, Operations on Tuples, lists and tuples, Tuple as return value- Dictionaries-operations and methods, Nested Dictionaries, Union Operation.

7	Theory: 45 Hrs	Tutorial:	Practical:	Project:	Total Hours: 45 Hrs
TEX	т воокs				
1.	Reema Thareja, "Edition 2023.	Problem Solving a	and Programming	with Python" Oxf	Ford University Press, 2 <sup>nd</sup>
REFI	ERENCES				
1.	Ashok Namdev K Python" Mc-Graw			"Programming an	d Problem Solving with
2.	Charles Dierbach, Solving Focus" W			e using Python: A	Computational Problem
3.	Allen Downey, "Edition 2016.	Think Python: H	ow to Think Lik	e a Computer Sc	ientist" O'Reilly Media, 2nd
4.	Timothy A. Budd,	" Evaloring Dutho	n" Mc Graw Hill	Education (India)	Private I td. 2015

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### U23PPL112

#### PYTHON PROGRAMMING LABORATORY

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(Common to ADS, IT, CSE, CSE(AIML), CSD, CIVIL, BME, ECE, EEE, MECH and MCT Branches)

#### **Course Outcomes**

At the end of the course, the student will be able to

CO1:	Implement the algorithms using basic control structures in Python

CO2: Develop Python programs to use functions, strings and data structures to solve different types of problems

CO3: Implement persistent storing information through file operations

Pre-requisite: NIL

#### CO/PO, PSO Mapping

(3/2/1 indicates the strength of correlation) 3-Strong, 2-Medium, 1-Weak

CO-			Progran	nme Oi	itcome	s (POs)	and Pro	ogramm	ne Spec	ific Out	comes (	PSOs)		
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	3	2	1								1
CO2	3	3	3	3	2	2								1
CO3	3	3	3	3	2	2								1

#### Course Assessment methods

	Direct.	Indirect
CIE test I (15) Quiz I- (5) CIE test II (15) Quiz II- (5)	RTPS (10) Record (10) Total CIE: 60 marks Semester End Examination (40 marks)	Course end survey

#### LIST OF EXPERIMENTS

- 1. Draw flowchart using any open source software.
- 2. Implement programs with simple language features.
- 3. Implement various branching statements in python.
- 4. Implement various looping statements in python.
- Develop python programs to perform various string operations like concatenation, slicing, indexing.
- 6. Implement user defined functions using python.
- 7. Implement recursion using python.
- 8. Implement python program to perform operations on file and module.
- 9. Develop python programs to perform operations on list and tuples.
- 10. Implement dictionary and set in python.

Theory: -- Tutorial: -- Practical: 30Hrs Project: -- Total Hours: 30 Hs

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U.	23EC	зKI	.07		EIN	GINE	EKING	GKAFI	iics		3	0	0	0	3
Cours	e Ou	ıtcoı	mes												
At the	e end	of t	he cou	rse, the	studen	t will	be able	to							
CO1	:	Cor	nstruct -	-Ellipse	, Parab	ola, H	yperbola	, Cyclo	ids and	Involu	tes.	4.5			
CO2	2:	Dra	w the p	projectio	on of Po	int, Li	ne and I	Plane su	rfaces.				1		
CO	3:	Dra	w the p	projectio	on of sir	nple s	olids by	rotating	g object	metho	d.				
CO	1:	Dev	relop th	e sectio	n of sin	nple s	olids and	lateral	surface	of tru	ncated s	olids.			
COS	5:	Dra	w the is	sometri	c view	to orth	nographi	c projec	ction.						
Pre-re	quis	ite:	Nil												
							CO/PO,								
			MALASTA STATE OF STATE				gth of co	36.75	7						
COs	PO	<b>Y1</b>	PO2	Program PO3	PO4	PO5	PO6	PO7	PO8	P09		PO11	PSOs) PO12	PSO1	PSO
CO1			102	100	104	103	100	107	3	107	2	1011	1012	1	100
COI	1								3		2			1	
CO2						3			2		2		2		2
СОЗ						3			2		2		2	1	2
CO4						3			2		2		2	1	2
CO5				2					2		2		2	1	
			122			Co	urse Ass	essmer	t meth	ods	9 1 3C 50 100 000 00 4	***************************************		1 To State Conf. The State Conf.	
					E	Direct							Indir	ect	
CIE te CIE te CIE te Assign	est III	(8) (8)	eminar/G	Quiz (5)	)		Objective Attendar Fotal CII Semester	nce (5) E: 40 ma	arks	tion (60	)	Соц	ırse end	d survey	y
							ot for Exa				1	-100			
					_		plication layout								
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Programme: B.E - Mechanical Engineering

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Unit 02: PROJECTION OF POINTS, LINES AND PLANE SURFACES (CAD	en <sup>27</sup>
software). Orthographic projection- principles-principal planes-First angle projection-projection of	
points. Projection of straight lines (only First angle projections) inclined to both the	9 Hours
principal planes -Determination of true lengths and true inclinations by rotating line	
method. Projection of planes (polygonal and circular surfaces) inclined to one of the	
principal plane by rotating object method.	
	ra na kalena ya di
Unit 03: PROJECTION OF SOLIDS (CAD software).	
Projection of simple solids - prisms, pyramids, cylinder and cone, when the axis is	9 Hours
inclined to one of the principal planes and parallel to the other by change of position	Jiouis
method.	
THE PROPERTY OF SECTION FOR SOLVED SO	
Unit 04: PROJECTION OF SECTIONED SOLIDS AND DEVELOPMENT OF	
SURFACES (CAD software).  Section of solids in simple vertical position when the cutting plane is inclined to one of	
the principal planes and perpendicular to the other — <b>(obtaining true shape of section)</b>	9 Hours
is not required). Development of lateral surfaces of truncated solids — Prisms,	
pyramids cylinders and cones.	
Unit 05: ISOMETRIC TO ORTHOGRAPHICS PROJECTION- (Manual drafting).	
Representation of three dimensional objects – General Principles - Need for importance	
of multiple views – First angle projection – layout of views – Conversion of isometric	
view to orthographic views.	0.11
	9 Hours
Practicing three dimensional modelling of simple objects using CAD Software (Not for	
examination)	
Theory: 45 Hrs Tutorial: Practical: Project: Total	Hours: 45 Hrs
	d.
TEXT BOOKS	,
A STANDARD CONTROL CON	2.3
1. Bhatt N.D. and Panchal V.M., "Engineering Drawing", Charotar Publishing Ho	ouse, 53rd Edition,
1. Bhatt N.D. and Panchal V.M., "Engineering Drawing", Charotar Publishing Ho	
<ol> <li>Bhatt N.D. and Panchal V.M., "Engineering Drawing", Charotar Publishing Ho. 2019.</li> <li>Natrajan K.V., "A Text Book of Engineering Graphics", Dhanalakshmi Publishers,</li> </ol>	Chennai, 2018.
1. Bhatt N.D. and Panchal V.M., "Engineering Drawing", Charotar Publishing Ho. 2019.	Chennai, 2018. Press, 2015

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Programme: B.E - Mechanical Engineering

Regulations 2023

Dr. D. SENTHIL KUMAR, M.E., Ph.D PROFESSOR & HEAD DEPT. OF MECHANICAL ENGG. SONA COLLEGE OF TECHNOLOGY JUNCTION MAIN ROAD, SALEM-5.

### REFERENCES

- 1. BasantAgarwal and Agarwal C.M., "Engineering Drawing", McGraw Hill, 2nd Edition, 2019.
- 2. Gopalakrishna K.R., "Engineering Drawing" (Vol. I&II combined), Subhas Publications, Bangalore, 27thEdition, 2017.
- 3. Luzzader, Warren.J. and Duff, John M., "Fundamentals of Engineering Drawing with an introduction to Interactive Computer Graphics for Design and Production, Eastern Economy Edition, Prentice Hall of India Pvt. Ltd, New Delhi, 2005.
- 4. Parthasarathy N. S. and Vela Murali, "Engineering Graphics", Oxford University, Press, New Delhi, 2015.
- 5. Shah M.B., and Rana B.C., "Engineering Drawing", Pearson Education India, 2nd Edition, 2009.
- 6. Venugopal K. and Prabhu Raja V., "Engineering Graphics", New Age International (P) Limited, 2008.

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0431	TAM101	கமிமர்	மரபு / Heritage of Tamils	L	T	P	J	С
		<b>2</b> g		1	0	0	0	1
Course C	Outcomes							
At the en	d of the cour	se, the student w	vill be able to					
CO1:	Describe T	amil Language ar	nd Literature					
CO2:	Analyse H	eritage - Rock Ar	t Paintings To Modern Art - Sculp	ture				
CO3:	Explain Fo	lk and Martial Ar	ts				v	
CO4:	Describe T	hinai Concept of	Tamils					
CO5:	Analyse C	ontribution of Ta	mils to Indian National Movement	and Ind	ian Cult	ture		
			Course Assessment methods					
		Dire	ect			Indire	ct	
CIE test I CIE test I	II (30)		Total CIE: 100 marks Semester End Examination: NI	L	Cou	rse end	survey	
	` /	மற்றும் இ	லக்கியம்			3	Hour	3
கருத்து	் <b>-</b> சங்க நக்கள் -	இலக்கியத்த தமிழ்க்	க்கியங்கள் - சங்க இலக் நில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக நி இலக்கியம், ஆழ்வார்கள	ருக்கு நத்தில்	தளில் சப	மேல ந <b>ண</b>	ாண் பெ	மைக் ாத்த
கருத்து சமயங் சிற்றில வளர்ச்ச	் <b>-</b> சங்க நக்கள் - களின் தா கக்கியங்கள் சியில் பார	இலக்கியத்த தமிழ்க் க்கம் - பக்தீ ர் - தமிழில் தியார் மற்றுட	நில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக நி இலக்கியம், ஆழ்வார்கள நவீன இலக்கியத்தின் வ ம் பாரதிதாசன் ஆகியோரிக	ருக்கு தத்தில் ர மற் பளர்ச்சி ர் பங்	தளில் சப நும் ந ி <b>–</b> த களிப்ப	மேல நண நாயன் நமிழ் 1.	ாண் பெ மார்க இலக்	மைக் எத்த ள் கிய
கருத்து சமயங் சிற்றில வளர்ச்ச	் <b>-</b> சங்க நக்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> சி <b>ற்</b>	இலக்கியத்த தமிழ்க் க்கம் - பக்தீ ர் - தமிழில் தியார் மற்றும - <b>பாறை ஓவி</b> ப <b>க் கலை</b>	நில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக நி இலக்கியம், ஆழ்வார்கள நவீன இலக்கியத்தின் வ ம் பாரதிதாசன் ஆகியோரிவ <b>யங்கள் முதல் ஓவியங்க</b> ை	ருக்கு? த்தில் ர் மற் பளர்ச்சி ர் பங்	தளில் சப நும் ந சி – த களிப்ப	மேல் நண் நாயன் நமிழ் 1.	ாண் பெ மார்க இலக் Hour	மைக் எத்த ள் ககிய
கருத்து சமயங் சிற்றில வளர்ச்ச அலகு 2 மற்றும் செய்யு குமரிமு வீணை	் <b>-</b> சங்க நக்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> <b>சிழ்</b> நடுகல் பு அவர்கள ம் களை நனையில்	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றுட - <b>பாறை ஓவி</b> பக் கலை pதல் சிற்பங்க ந தயாரிக்கும் திருவள்ளுவ நாதஸ்வரம்	தில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக இலக்கியம், ஆழ்வார்கள நவீன இலக்கியத்தின் வ ம் பாரதிதாசன் ஆகியோரிவ ய <b>ங்கள் முதல் ஓவியங்கள</b> கள் வரை – ஐம்பொன் ம் கைவினைப் பொருட்க சிற்பங்கள் - நாட்டு ர் சிலை - இசைக் கருவ	ருக்கு த்தில் ப் மற் பளர்ச்சி ப் பங் சிலை எர், செ ப்புறத்	தளில் நும் ந களிப்ப கள் - பாம்ன - மிரு	மேல் நண் நாயன் நமிழ் பழங் நமகள் தய்வா ததங்க	on ண் பெ மார்க இலக் Hour பகுடிய பக்கள் ம், ப	மைக் ாத்த ள் ககிய க பினர் தேர்
கருத்து சமயங் சிற்றில வளர்ச்ச அலகு 2 மற்றும் செய்யு குமரிமு வீணை கோவி	் <b>-</b> சங்க நக்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> <b>சிற்</b> நடுகல் பூ அவர்கள ம் களை நனையில் , யாழ், ல்களின் ப	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றுட - <b>பாறை ஓவி</b> பக் கலை pதல் சிற்பங்க ந தயாரிக்குட ந சடுமண் திருவள்ளுவ நாதஸ்வரம் ங்கு	தில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக இலக்கியம், ஆழ்வார்கள நவீன இலக்கியத்தின் வ ம் பாரதிதாசன் ஆகியோரின் <b>யங்கள் முதல் ஓவியங்கள</b> கள் வரை — ஐம்பொன் ம் கைவினைப் பொருட்க சிற்பங்கள் - நாட்டு ர் சிலை - இசைக் கருவ - தமிழர்களின் சமூக	ருக்கு த்தில் ப் மந் பார்ச்சி ப் பங் சிலை எர், செ ப்புநத் பெ	தளில் தம் ந தன் - த களிப்ப கள் - பாம்ன - மிரு எருளா	மேல் நண் நாயன் நமிழ் பழங் நமகள் தய்வா நதங்க தார	ாண் பெ மார்க இலக் Hour ங்கள் ம், ப வாழ்	மைக் எத்த எர் கேய தேர் ஹே
கருத்து சமயங் சிற்றில வளர்ச்ச அலகு 2 மற்றும் செய்யு குமரிமு வீணை கோவிச	் <b>-</b> சங்க நக்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> <b>சிற்</b> நடுகல் பு அவர்கள ம் களை நனையில் , யாழ், ல்களின் ப சேருக்கு	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றும் பாறை ஓவி பக் கலை நதல் சிற்பங்கும் திருவள்ளுவம் நாதஸ்வரம் ங்கு <b>நக் கலைகள்</b>	தில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக இலக்கியம், ஆழ்வார்கள் நவீன இலக்கியத்தின் வ ம் பாரதிதாசன் ஆகியோரின் <b>யங்கள் முதல் ஓவியங்கள</b> கள் வரை — ஐம்பொன் ம் கைவினைப் பொருட்க சிற்பங்கள் - நாட்டு ர் சிலை - இசைக் கருவ - தமிழர்களின் சமூக	ருக்கு த்தில் ர் மற் பளர்ச்சி ர் பங் சிலை ள், செ பெறத் கள் பெ	தளில் நும் ந தளிப்ப கள் - பாம்ன - மிரு எருளா	மேல் நண் நாயன் நமிழ் பு. பழங் நமகள் தய்வா நதங்க தார	பாண் பெ மார்க இலக் Hour ங்கள் ம், ப வாழ் Hour	மைக் எத்த ள் கேய் தேர் வில்
கருத்து சமயங் சிற்றில வளர்ச்ச அலகு 2 மற்றும் செய்யு குமரிமு வீணை கோவிச அலகு 3	் <b>-</b> சங்க நக்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> <b>சிற்</b> நடுகல் பு அவர்கள ம் களை நனையில் , யாழ், ல்களின் ப சேருக்கத	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றும் பாழை ஓவி பக் கலை நதல் சிற்பங்க ந தயாரிக்கும் திருவள்ளுவ திருவள்ளுவ நாதஸ்வரம் ங்கு மக் கலைகள் த்து, கரகாட்டா	தில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக இலக்கியம், ஆழ்வார்கள் நவீன இலக்கியத்தின் வ ம் பாரதிதாசன் ஆகியோரின் <b>யங்கள் முதல் ஓவியங்கள்</b> கள் வரை — ஐம்பொன் ம் கைவினைப் பொருட்க சிற்பங்கள் - நாட்டு ர் சிலை - இசைக் கருவ - தமிழர்களின் சமூக ர் <b>மந்றும் வீர விளையாட்டு</b>	ருக்கு த்தில் ப் மந் ப் பங் சிலை எ், செ ப்புறத் கள் பெ தகள் கத்த	தளில் தம் ந களிப்ப தள் – கள் – பாம்ன - மிரு எருளா	மேல் நண் நாயன் நமிழ் பழங் நைய்வா நதங்க தார	பாண் பெ மார்க இலக் Hour ங்கள் ம், ப வாழ் Hour	மைக் எத்த எர் கேப்ப தேர் வில் கள்

1	நால நகரங்களும் துறை முகங்களும் - சங்ககாலத்தில் ஏ <u>ற்று</u> மதி ம <u>ற்று</u> ம்
இறக்(	தமதி — கடல்கடந்த நாடுகளில் சோழர்களின் வெற்றி.
	5: இந்திய தேசிய இயக்கம் மற்றும் இந்திய பண்பாட்டிற்குத் களின் பங்களிப்பு
	இந்திய விடுதலைப்போரில் தமிழர்களின் பங்கு - இந்தியாவின்
பிறப்ப	பகுதிகளில் தமிழ்ப் பண்பாட்டின் தாக்கம் - சுயமரியாதை இயக்கம் - இந்திய
மருத்	துவத்தில், சித்த மருத்துவத்தின் பங்கு – கல்வெட்டுகள்
கைவ	பழுத்துப்படிகள் - தமிழ்ப் புத்தகங்களின் அச்சு வரலாறு.
	eory: 15 Hrs Tutorial: Practical: Project: Total Hours: 15 Hrs
REFER	RENCES
1	தமிழக வரலாறு — மக்களும் பண்பாடு — கே.கே. பிள்ளை (வெளியீடு: தமிழ்நாடு பாடநூல் மற்றும் கல்வியியல் பணிகள் கழகம்).
2	கணினித் தமிழ் - முனைவர் இல.சுந்தரம்.(விகடன் பிரசுரம்).
3	கீழடி — வைகை நதிக்கரையில் சங்ககால நகர நாகரிகம் (தொல்லியல் துறை வெளியீடு)
4	பொருநை —ஆற்றங்னரை நாகரிகம். (தொல்லியல் துறை வெளியீடு)
5	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL – (in print)
6	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by:
	International Institute of Tamil Studies
7	Historical Heritage of the Tamils (Dr.S.V.Subatamanian, Dr.K.D. Thirunavukkarasu) (Published by: International Institute of Tamil Studies).
8	The Contributions of the Tamils to Indian Culture (Dr.M.Valarmathi) (Published by:
	International Institute of Tamil Studies.)
9	Keeladi - 'Sangam City C ivilization on the banks of river Vaigai' (Jointly Published by:
	Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)
10	Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay)
10	(Published by: The Author)
11	Porunai Civilization (Jointly Published by: Department of Archaeology & Tamil Nadu Text
	Book and Educational Services Corporation, Tamil Nadu)
12	Journey of Civilization Indus to Vaigai (R.Balakrishnan) (Published by: RMRL) - Reference
	Book.

HOD HOD

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SALEM - 650 005.

U23T.	AM101	தமிழர் மர	니 / Heritage of Tamils	L	T	P	J	С
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Course O	utcomes						•	
At the end		se, the student will						
CO1:	Describe T	amil Language and I	Literature					
CO2:	Analyse H	eritage - Rock Art Pa	intings To Modern Art – Sc	ulpture				
CO3:	Explain Fol	k and Martial Arts						
CO4:	Describe Tl	ninai Concept of Tan	nils					
CO5:	Analyse Co	ontribution of Tamils	to Indian National Moveme	ent and I	ndian Cul	lture		
		Cou	irse Assessment methods				-	
2000 To 100		Direct				Indire	ct	
CIE test I ( CIE test II CIE test III	(30)	1	Cotal CIE: 100 marks demester End Examination: 1	NIL	Cou	rse end	survey	
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3	கீழடி – மவமக நதிக்கமரயில் ெங்ககொல நகர நொகரிகம் (ததொல்லியல் துமறதவளியீடு)
4	பொருமந – ஆற்றங்கமர நொகரிகம். (ததொல்லியல் துமற தவளியீடு)
5	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL – (in print)
6	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies
7	Historical Heritage of the Tamils (Dr.S.V.Subatamanian, Dr.K.D. Thirunavukkarasu) (Published by: International Institute of Tamil Studies).
8	The Contributions of the Tamils to Indian Culture (Dr.M.Valarmathi) (Published by: International Institute of Tamil Studies.)
9	Keeladi - 'Sangam City C ivilization on the banks of river Vaigai' (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)
10	Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published by: The Author)
11	Porunai Civilization (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)
12	Journey of Civilization Indus to Vaigai (R.Balakrishnan) (Published by: RMRL) - Reference Book.

HOD

Dr. M.RENUGA,
Professor & Head,
Department of Humanities & Languages,
Sona College of Technology,
SALEM - 636 (\*\*)

1122CE101	DACIC ADTITUDE 1	L	T	P	J	C
U23GE101	BASIC APTITUDE-1	2	0	0	0	0

#### **Course Outcomes**

#### At the end of the course, the student will be able to

- CO1: Solve the problems in Divisibility, Division algorithm, Successive Division and HCF & LCM. Identify Synonyms and Antonyms.
- CO2: Elucidate the problems in BODMAS rule, Approximation, Surds and Indices, Algebraic Simplification and Square root and Cube root.

Choose appropriate Verbal Analogies and edit the given passages.

- Crack the problems involving Ratio and Proportion, and discuss Proportionality Theorems.

  Comprehend the given passages for Reading Comprehension activity and answer the questions correctly.
- Deduce the problems involving Linear equation and Quadratic equation.

  Demonstrate good vocabulary skill by doing the one word substitution and sentence filler exercise with high degree of accuracy.
- CO5: Interpret the logical reasoning problems from Number series ,Coding and Decoding and Exhibit good expertise in detecting errors in the given sentences.

#### Pre-requisite:

- Basic English language and Grammar knowledge
- Knowledge in Basic Mathematics

#### CO/PO, PSO Mapping

(3/2/1 indicates the strength of correlation) 3-Strong, 2-Medium, 1-Weak

		Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)														
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO 11	PO12				
CO1	3	3-	3-	2	1	1	1	3	3	3-	2	3				
CO2	3	3	3	2	1	1	1	3	3	3	2	3				
CO3	3	3	3	2	1	1	1	3	3	3	2	3				
CO4	3	3	3	2	1	1	1	3	3	3	2	3				
CO5	3	3	3	2	1	1	1	3	3	3	2	3				

#### Course Assessment methods

	Direct	Indirect
CIE test I (30) - Theory	Total CIE: 100 marks	
CIE test II (30) - Theory	Semester End Examination – NIL	Course end survey
CIE test III (40) – Theory		

Unit 01

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6 Hours

Number Properties: Classification of numbers - Divisibility - Division algorithm - Successive Division -

HCF and LCM -Problems

Verbal Aptitude: Synonyms and b. Antonyms

Unit 02

6 Hours

Simplification: BODMAS Rule - Approximation - Surds and Indices - Algebraic Simplification - Square

root and Cube root - Problems

Verbal Aptitude: Verbal analogy, Editing passages

Unit 03

6 Hours

Ratio and Proportion: Ratio - Properties of Ratios - Compound Ratio - Coin based problems - Proportion - Proportionality Test - Proportionality Theorems - Inverse Proportion - Variation - Problems

Verbal Aptitude: Reading Comprehension

Unit 04

6 Hours

#### Equations:

- a. Linear equation: Simultaneous Linear Equations Consistent System Inconsistent System Problems
- b. Quadratic Equation: Different Ways to Express the Quadratic Equation Discriminant of the Quadratic Equations Roots Nature of the Roots Relation between roots and coefficient of equation Formation of a Quadratic Equation Problems

Verbal Aptitude: One word substitution, Sentence filler words

Unit 05

6 Hours

Logical Reasoning: Number series - Coding and Decoding - Problem

Verbal Aptitude: Error detection

Theory: 30 Hrs

Tutorial: 0

Practical: 0

Project: 0

**Total Hours: 30 Hrs** 

#### **TEXT BOOKS**

- 1. S.Chand and Dr.R.S.Aggarwal, "Quantitative Aptitude for competitive examinations", S Chand and Company Limited 2019.
- Nishit K.Sinha, "Logical Reasoning and Data Interpretation", Pearson 2021.

Dr.S.Anita

Head/Training Dr. S. ANITA

Professor and Head
Department of Training,
SONA COLLEGE OF TECHNOLOGY,

B.E / B.. Tech Regulations 2023

U23	OL1101	French			Ĺ	T	P	J	C
	021101	,			1	0	0	0	1
Course (	Outcomes				e:				
At the er		se, the student wi							
CO1:	Read Frence English sou		ench phonitis, pract	ice French accent	s, dif	ferenti	ate Frei	nch and	i
CO2:		neself, talk about s d politely in a conv	omeone, ask others ersation	personal informa	tion, i	identif	y an ob	ject, as	k
CO3:			cement, describe abo	out neighbours, w	rite a	small	portrait	t	
CO4:	justify a ch	oice, express one's	out one's hobbies, a preferences, write a	list of needs					blog
CO5:	Suggest to	do something, appr	reciate something, ta	lk about a movie	, write	e a pos	stal card	1	
	, 100	C	ourse Assessment	nethods					
		Direc	t				Indire	ct	
CIE test	I (30)		Total CIE: 100 mai	·ks			,		
CIE test	II (30)		Semester End Exa	mination: NIL		Cour	se end	survey	ξ,
CIE test	III (40)	3.545		-					
nit 01:							3	Hours	3
Hr 6: De		countries, colors, numbers 0-20, wri	days & months te about one's ident	ification			Γ -		*************
nit 02:		, st				٨	3	Hours	3
Hr 10: Pr	reposition of p	place, identity card,	verbs, indefinite arti negative sentence ephatitic pronouns, s		nlina	81			
nit 03:	illigs around	us, subjective and c	phatitic pronouns, s	cii-iiii oduction c	<u> </u>		3	Hours	3
Hr 16: A	djective's gen	der, noun's gender	gation: aller and ver t, things in a room, saccommodation, wr	imple preposition	IS	es			
nit 04:	nysicai acsem	otton, speak about t	accommodation, with	amg a sen poular			3	Hours	3
Hr 20: H	terrogative ad	ljectives, daily activ	vities, time and seas rences, write a mail		verbs				-
Hr 24 · N	our ruture tour	se, talk about profe	renees, write a mair		*		3	Hours	3
nit 05:		s, conjugation: fair	e and sortir, demon	strative adjectives	 }				
nit 05: Hr 26: O Hr 28: A	uting activitie		re and sortir, demon nbers, past tenses (p write a postal card			arfait)			
Init 05: Hr 26: O Hr 28: A Hr 30: Fi	uting activitie	quency, family men	nbers, past tenses (p				l Hours	: 15 Hı	rs
Init 05: Hr 26: O Hr 28: A Hr 30: Fi	uting activitie dverbs of frec rench arts, tall ory: 15 Hrs	quency, family men k about a film, and	mbers, past tenses (p write a postal card	assé composé and			l Hours	: 15 Hı	rs
Finit 05: Hr 26: O Hr 28: A Hr 30: Fi Theo	uting activitie dverbs of free rench arts, tall bry: 15 Hrs	quency, family ments about a film, and  Tutorial:	mbers, past tenses (p write a postal card	assé composé and Project:	l impa		l Hours	: 15 Hı	rs
Init 05: Hr 26: O Hr 28: A Hr 30: Fr Thee TEXT BC	uting activitied dverbs of frequench arts, tall bry: 15 Hrs  OOKS he course fact	ruency, family ment about a film, and  Tutorial:  ulty will provide re	nbers, past tenses (p write a postal card Practical:	Project: s, handouts and n	l impa		l Hours	: 15 Hı	rs

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0230	OL1102		:		1	0	0	0	1
Course C	Outcomes								
At the en	d of the cou	rse, the student wil	l be able to						
CO1:	Use commo	on, everyday expres	sions to greet others	s and introduc	ce them:	selves.			
CO2:	Construct s	imple sentences /qu	estions.				· · · · · · · · · · · · · · · · · · ·		
CO3:	Initiate and	sustain basic conve	ersation based on fa	mily, professi	ions,				*
CO4:	Hobbies an	d food.							
CO5:	Identify dif	ferences in using no	ouns based on gende	er.					
	1	C	ourse Assessment r	nethods					
		Direc					Indire	et	
CIE test I CIE test I	I (30)		Total CIE: 100 mar Semester End Exar			Cou	rse end	survey	e.
Unit 01:	11 (40)						3	Hours	
• G	reeting and ta	aking leave, introdu	cing oneself, introd	ucing others					
Unit 02:			1				3	Hours	3
• A	lphabets, spe	lling, numbers							
Unit 03:							3	Hours	3
• A	ge, Telephon	e/mobile numbers,	Month, Date, Time		8				
Unit 04:			-				3	Hours	3
. • L	anguages, Fa	mily, Asking/giving	g information about	family memb	ers				
Unit 05:		A		-			3	Hours	3
-	lobbies, Profe								
Theo	ory: 15 Hrs	Tutorial:	Practical:	Project:-	-	Tota	1 Hours	: 15 H	ts
TEXT BO									
1. N	etzwerk A1		6						

HOD

Dr. M.RENUGA, Professor & Head,

Department of Humanities & Languages, Sona College of Technology, SALEM - 63

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U230	OL1103	Japane	se		0	0	0	1
Course C	Outcomes		·					
Course Outcomes								
				ite the letters of the	ne alphabe	t, identi	fy nam	es of
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CO3:			irough the day and ti	iose used for givi	ng unngs, a	and den	nonstra	ile.
CO4·			anese language, de	scribe the locati	ons of di	ifferent	things	and
CO 1.		_	~ ~ ~					
CO5:				ngness to go to Ja	pan and us	se 'Te-f	orm' v	erbs
		C	Course Assessment n	nethods				
		Direc	t			Indire	ct	
CIE test I	(30)		Total CIE: 100 mar	ks				
			Semester End Exam	nination: NIL	Cou	rse end	survey	7
CIE test I	II (40)						***************************************	
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			or objects shown					
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	1: 0 1:					3	Hour	5
			IOHS					
	. Iviaking ngn	t conversation		,		] 3	Hour	s
	: Expressions	to use verbs from	morning to night					
Hr 17-18	: Adjectives			14				
Jnit 04:				4		3	Hours	5
				re)				
	: Japanese nu	mbers and countin	g	attrama de dem milio escarato de la companya de la		Τ,		
	. ) (-1-i					3	Hour	5
			hing like 'I want to	oo to Ianan I'				
			imig, fike I want to	go to supun				
	ory: 15 Hrs	Tutorial:	Practical:	Project:	Tota	l Hours	: 15 H	rs
TEXT BO	OOKS				-			
		ılty will provide ha	andouts / notes / cour	se material.				
	ooks on Basic	Japanese languag	e available in the col	lege library.				
2.				J J-	131		. 0	1

Dr. M.RENUGA,
Professor & Head, Department of Humanities & Lan

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Course O									
		se, the student wi							
CO1:			ants syllable structu	ire.				9	
CO2:		s and introduce the	emselves.						
CO3:		e, date and week	a - 2						
CO4:		ation and places							
CO5:	Construct si	imple sentences / c	questions.						
		C	Course Assessment	methods					9
		Direc	1		-		Indire	ct	
CIE test I	(30)		Total CIE: 100 mar	rks					-
CIE test II	0.0		Semester End Exa			Cour	se end	survev	
CIE test II	• •		Different Life Like					- 7	
nit 01: H			<u> </u>				3	Hours	 3
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Tense Con		onants syndone st	raotaro						
	d Consonants								
Double V									
Final Cor									
	inal Consonar	nts							
Liaison									
nit 02: Iı	ntroduction						3	Hours	3
Greetings	-	× 1							-
_	bout names								
Self-intro									
ntroducir	ng my family	members	*						
Unit 03:	Time and Da	ate					3	Hours	3
Talkir	ng about locat	ion	)				1		
Talkir	ng about dates	s and days of the w	veek						
Talkir	ng about doing	g something in the	past						
nit 04: I	Location and	Places					3	Hours	3
Talking al	bout location								
Talking al	bout doing so	mething at a locati	ion	*					
Falking al	bout direction	IS						5	
nit 05: Fu	uture						3	Hours	3
	•	g something in the	future						
		s for the future							
Talkin	ng about hope	for the future	-						
Theo	ry: 15 Hrs	Tutorial:	Practical:	Project:	*	Total	Hours	: 15 H	rs
SPER									
REFERE	NCES								

Dr. M.RENUGA, Professor & Head,

Department of Humanities & Languages, Sona College of Technology, B.E / B.Tech Regulation 2023 6 105.

## Sona College of Technology, Salem

#### (An Autonomous Institution)

Courses of Study for B.E/B.Tech. Semester II under Regulations 2023 (CBCS)

Branch: BE Computer Science and Engineering (Artificial Intelligence and Machine Learning)

S.No	Course Code	Course Title	L	Т	P	J	С	Category	Total Contact Hours	Course Type*
Course Code   Course Title   L   T   P   J   C   Category   Contact Hours   Type										
1.	U23ENG201A	Technical English	2	0	0	0	2	HL	30	T
2.	U23MAT202D	Discrete Mathematics	3	1	0	0	4	BS	60	TT
3.	U23CHE204C	Applied Chemistry	2	0	0	0	2	BS	30	Т
4.	U23CPR205	Programming in C	3	0	0	0	3	ES	45	Т
5.	U23BEE206B	The state of the s	3	0	0	0	3	ES	45	Т
6.	U23EC203	Digital Principles and System	3	0	0	0	3	PC	45	T
7.	U23TAM201		1	0	0	0	1	HS	15	T
8.	U23GE201	Basic Aptitude- II	2	0	0	0	0	AC	30	T
		Practica	l cou	irses						
9.	U23CPL212	C Programming Laboratory	0	0	2	0	1	ES	30	L
10.	U23CHL211	Chemistry Laboratory	0	0	2	0	1	BS	30	L
11.	U23BEEL213B	Electronics Engineering	0	0	2	0	1	ES	30	L
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	U23OL1201	French - II							15	4550
	U23OL1202	German - II				3.5		OI.	15	Т
12	U23OL1203	Japanese - II	1	0	0	0	1	OL	15	Т
	U23OL1204	Korean - II							_ 15	Т
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<sup>\*</sup>T- Theory, TT- Theory with Tutorial, TL- Theory with Laboratory, TP- Theory with Project, TLP- Theory with Laboratory and Project, L-Laboratory, LT- Laboratory with Theory, LP- Laboratory with Project

<sup>\*\*</sup>Students may opt for foreign languages viz., German/French/Japanese/Korean with additional one credit (Not accounted for CGPA calculation)

Approved By	Man	hivakimen	T DUND Z	
Chairperson, Science and Humanities BoS	Chairperson, CSE BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr.M.Renuga	Dr B.Sathiyabhama	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil Kumar

Copy to:-

HOD/CSE (Artificial Intelligence and Machine Learning), Second Semester B.E. AIML Students and Staff,

COE

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CO		Organise id												
CO	4: I	Develop sk	cills for	writing	g conve	rsations	, propo	sals, rep	orts an	d transc	oding	9		
CO	5: F	Read for u	ndersta	nding a	nd inte	rpreting	inform	ation ar	nd to ut	ilise info	ormatio	n accor	dingly	
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Reading passages for specific information transfer

#### Unit 02: 6 Hours Prepositions, adverbs Note making Reading passage with multiple choice questions, reading for gist and reading for specific information Unit 03: 6 Hours Collocations, direct and indirect speech Memo Proposal: establishing a lab, introducing a subject in the curriculum, training programme for students Short reading passage: gap-filling exercise related to grammar Unit 04: 6 Hours Cause and effect Technical report writing – feasibility report, accident report, survey report Short reading passages for sentence matching exercises, picking out specific information in a short Unit 05: 6 Hours **Pronouns** Transcoding – bar chart, pie chart, tabular column Theory: 30 Hrs Tutorial: --Practical: -Project:--**Total Hours: 30 Hrs TEXT BOOKS** Technical English I & II, Dr. M. Renuga et al. Sonaversity, 2016 **Extensive Reading** 1. Who Moved my Cheese? - Spencer Johnson-G. P. Putnam's Sons 2. Discover the Diamond in You - Arindham Chaudhari - Vikas Publishing House Pvt. Ltd. 3. Grandma's Bag of Stories - Sudha Murthy - Penguin Random House, India. REFERENCES Norman Whitby, Business Benchmark - Pre-Intermediate to Intermediate, Students Book, Cambridge University Press, 2006. A Course in Communication Skills, P. Kiranmai Dutt, Geetha Rajeevan, C. L. N. Prakash, published by Cambridge University Press India Pvt. Ltd.

HOD 13/2/24.

Dr. M.RENUGA,
Professor & Head,
Professor & Languages,
College of Technology,
W - 62

Course Outcomes  At the end of the course, the student will be able to  Col: check the validity of the arguments in the field of data base and artificial intelligence using the rules of logic.  CO2: apply the concept of logical theory to validate the correctness of software specifications.  CO3: analyze and simplify the digital (logic) circuits using the concept of relations.  CO4: apply the concept of various types of functions in the field of sorting algorithm, parallel computing and image processing,  CO5: apply the concept of various types of functions in the field of sorting algorithm, parallel computing and image processing.  CO6: apply the concept of various types of functions in the field of sorting algorithm, parallel computing and image processing.  CO7: apply the concept of various types of functions in the field of sorting algorithm, parallel computing and image processing.  CO8: apply the concept of group theory in the field of coding theory and cryptography.  CO9: apply the concept of calculus  CO/PO, PSO Mapping  (3/2/1 indicates the strength of correlation) 3-Strong, 2-Medium, 1-Weak  CO9: Programme Outcomes (PO8) and Programme Specific Outcomes (PSO8)  CO9: PO9: PO9: PO9: PO9: PO9: PO9: PO9: P	Common to COMPUTER SCIENCE AND BAGINEERING, SE(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING) & COMPUTER SCIENCE AND DESIGN  Course Outcomes  At the end of the course, the student will be able to CO1: check the validity of the arguments in the field of data base and artificial intelligence using the rules of logic.  CO2: apply the concept of logical theory to validate the correctness of software specifications analyze and simplify the digital (logic) circuits using the concept of relations.  CO3: apply the concept of various types of functions in the field of sorting algorithm, paralle computing and image processing.  CO4: apply the concept of various types of functions in the field of sorting algorithm, paralle computing and image processing.  CO5: apply the concepts of group theory in the field of coding theory and cryptography.  Pre-requisites:  Fundamentals of elementary algebra  Fundamentals of calculus  CO6/PO, PSO Mapping  (3/2/1 indicates the strength of correlation) 3-Strong, 2-Medium, 1-Weak  Programme Outcomes (PO5) and Programme Specific Outcomes (PSOs)  Programme Outcomes (PO5) and Programme Specific Outcomes (PSOs)  CO1 3 3 3 3 2				-									*				
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#### Unit 02 PREDICATE CALCULUS 12 Hours Predicates - Propositional (Statement) function - Quantifiers (Universal and Existential quantifiers) - Variables - Free and bound variables - Scope of the formula - Negation -Logical equivalences and implications for quantified statements - Theory of inference - Rules of universal specification and generalization - Rules of existential specification and generalization Validity of arguments. Unit 03 | RELATIONS 12 Hours Relations - domain and range of a relation - Types of relations (reflexive, symmetric, transitive, antisymmetric irreflexive relation) and their properties - Relation matrix - Graph of a relation -Partition of a set - Equivalence relations - Equivalence Classes - Quotient set - Partial order relation - Poset - Hasse diagram. Unit 04 **FUNCTIONS** 12 Hours Functions - Classification of functions (algebraic and transcendental) - Types of functions (injective, surjective and bijective) - Composition of functions and its properties (statement only) - Inverse functions - Characteristic function of a set and its properties (with proof) - Permutation functions. Unit 05 **GROUPS AND GROUP CODES** 12 Hours Algebraic structures - Groups - Cyclic groups - Subgroups - Group homomorphism - Normal subgroups and Cosets - Lagrange's theorem - Codes and group codes - Basic notions of error detection and error correction. Theory: 45 Hrs Tutorial: - 15 Practical: -Project:--Total Hours: 60 Hrs **TEXT BOOK:** T. Veerarajan, "Discrete Mathematics", McGraw Hill Publishers, 1st Edition, 21st Reprint, 2015. REFERENCE BOOKS: J. P. Trembly and R. Manohar, "Discrete Mathematical Structures with Applications to Computer Science", McGraw Hill Publishers, 1st Edition, 2017. 2. K. H. Rosen, "Discrete Mathematics and Its Applications", McGraw Hill Publishers, 8th Edition, 2019. B. Kolman, R. C. Busby and S. C. Ross, "Discrete Mathematical Structures", Pearson Publishers, 6<sup>th</sup> Edition, 2006 ASSOCIATE PROFESSOR & HEAD DEPARTMENT OF MATHEMATICS. SONA COLLEGE OF TECHT OF OGY, SALEM-636 005. Temilinadu. Fit: 0427-4099999.

BoS Date: 08, 07, 2023

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Course On	utcomes		Commo	n to B	E. CSE (	AIML)	and CS	(C)					
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	of the co	ourse, the	studen	t will	be able	to							
CO1: Outline the principle of electrochemistry and its engineering applic									pplicati	ons.			
CO2:	Describe the construction, working principle and applications of energy storage devices for												
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CO3: Analyze the types of polymers, polymerization reactions, polymerization fabrication methods of polymers for engineering applications.											hniques	s and	
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Assignment/seminar/Quiz (5) Unit 01: ELECTROCHEMISTRY					Semester End Examination (60)					6 Hours			
nit 01: EI					rode pote								

Semester II

conductometric titrations (acid-base - HCl vs NaOH).

#### Unit 02: CHEMISTRY OF ENERGY STORAGE DEVICES

6 Hours

Reversible and irreversible Cells - Batteries - types of batteries - Fabrication and working of alkaline battery-Lead-acid battery-Ni-Cd-Lithium ion batteries and Solar cells - Fuel Cells - Hydrogen-Oxygen fuel cell - Nano batteries- construction-working-advantages and applications.

#### Unit 03: POLYMER CHEMISTRY

6 Hours

Introduction to Polymers - classification of polymers - functionality - tacticity, degree of polymersation, glass transition temperature in polymers - types of polymerization-addition-condensation and copolymerization - free radical mechanism of addition polymerization - Plastics - moulding constituents of plastic - moulding of plastics into articles-Injection and Compression moulding - Thermoplastic and Thermosetting Resins.

#### Jnit 04: CHEMISTRY OF ORGANIC ELECTRONIC MATERIALS

6 Hours

Conducting polymers, types and conducting mechanism - Organic semiconducting materials - working principle and advantages over inorganic semiconducting materials - p-type and n-type organic semiconducting materials - Pentacene Fullerenes-C-60 - Organic dielectric material-definition-working principle and examples - Polystyrene - PMMA - - Organic Light Emitting Diodes (OLEDs) - constructionworking principle and applications - Organic transistors- construction-working principle and applications.

#### Unit 05: E-WASTE MANAGEMENT

6 Hours

Introduction-E-Waste - definition - sources of e-waste- hazardous substances in e-waste - effects of E-waste on environment and human health- need for E-waste management- E-waste handling rules waste minimization techniques for managing E-waste - extraction of gold and copper from printed circuit boards (PCBs) - recycling of E-waste – disposal treatment methods of E – waste.

Theory: 30 Hrs

Tutorial: 0

Practical: 0

Project:0

Total Hours: 30 Hrs

#### **TEXT BOOKS**

- 1. P.C.Jain and Monica Jain, "Engineering Chemistry" Dhanpat Rai Pub, Co., New Delhi, 17th Edition, 2018.
- Wiley Editorial Board, "Wiley Engineering Chemistry", 2nd Edition, Wiley India Pvt.Ltd, New Delhi, Reprint 2019.

#### **REFERENCES**

- Gowariker V.R., Viswanathan N.V. and Jayadev Sreedhar, "Polymer Science", New Age International P (Ltd.,), Chennai, 2006.
- Stergios Logothetidis "Handbook of Flexible Organic Electronics Materials Manufacturing and Applications", WoodHead publishing., 1st edition, London, 2015.

- Sam-Shajing Sun, Larry R. Dalton "Introduction to Organic Electronic and Optoelectronic Materials and Devices", CRC press., 2nd edition, London, 2017.
- Majeti Narasimha Var Prasad, Meththika Vithanage, Anwesha Borthakur, "Handbook of Electronic Waste Management", 1st edition - November 21, 2019.

Dr. M.RENUGA, Professor & Head, Department of Humanities & Languages, Sona College of Technology, SALEM - 636 005.

Dr. C. SHANTHI, M.Sc., M.E., Ph.D.,

Professor of Physics Head, Department of Sciences Sona College of Technology (Autonomous) SALEM-636 005.

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Assign	st III (ment/	seminar/QPROGRA				emester	End Ex	aminati	on (60)						

Statements and Symbolic constants, Operators - Arithmetic Operators - Unary operators - Relational and Logical Operators - Assignment operators - Conditional operators. Unformatted and formatted Input/Output functions, preprocessor directives and storage classes.

# Unit 02: CONTROL STATEMENTS, ARRAYS AND STRING

9 Hours

Conditional statements, Unconditional statements, branching and looping statements - Arrays - Initialization -Declaration - One dimensional and Two dimensional arrays. String- String operations - String Arrays. Simple programs- sorting- searching - matrix operations.

# Unit 03: FUNCTIONS AND POINTERS

9 Hours

Function - Library functions and user-defined functions - Function prototypes and function definitions - Call by value - Call by reference - Recursion - Pointers - Definition - Initialization - Pointers arithmetic - Pointers and

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Semester II

B.E / B.. Tech Regulations 2023

Or. B. SATHIYABHAMA, B.E., M. Toch, Ph.O. PROFESSOR & HEAD. Dept. of Computer Science and Engineering SONA COLLEGE OF TECHNOLOGY SALEM-636 005

arrays - Pointers and Functions - Dynamic memory Allocation - Example Programs. **Unit 04: STRUCTURES AND UNIONS** 9 Hours Need for structure data type - structure definition - Structure declaration - Structure within a structure - Passing structures to functions - Array of structures - Pointers to structures - Union - Programs using structures and Unions **Unit 05: FILE MANIPULATIONS** 9 Hours Files-File operations- Binary files and text files - Types of File processing-Sequential access -Random Access File -Command line arguments. Theory: 45 Hrs Tutorial: 0 Practical: 0 **Total Hours: 45 Hrs** Project:0 TEXT BOOKS 1. Deitel and Deitel, "C How to Program", Pearson Education, New Delhi, 2011. 2. Yashavant P. Kanetkar. "Let Us C", BPB Publications, 14th edition, 2016. REFERENCES 1. Kernighan, B.W and Ritchie, D.M, "The C Programming language", Second Edition, Pearson Education, 2006. 2. Byron S Gottfried, "Programming with C", Schaum's Outlines, Second Edition, Tata McGraw-Hill, 2006. 3. Anita Goel and Ajay Mittal, "Computer Fundamentals and Programming in C", Dorling Kindersley (India) Pvt. Ltd., Pearson Education in South Asia, 2011.

4. E. Balagurusamy, "Programming in ANSI C", seventh edition, Tata McGraw Hill, 2016.

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Semester II

B.E / B.. Tech Regulations 2023

PROFESSOR & HEAD,

Dept. of Computer Science and Engineering
SONA COLLEGE OF TECHNOLOGY
SALEM-636 005

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COS	3: Ex	plain the	e constr	uction	and wo	king pr	rinciple	of Elec	trical m	nachines	and Tr	ansform	ner.	
CO4	1: De	scribe th	ne work	ing pri	nciples	and cha	racteris	stics of	semico	nductor	devices			
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#### Course Assessment methods

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Assignment/seminar/Quiz (5)	Semester End Examination (60)	

## Unit 01: DC FUNDAMENTALS

3

CO5

9 Hours

3

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1

Electrical components and parameters – Resistance, Conductance – Ohm's law – Kirchhoff's law – Resistors in series and parallel – Comparison of series and parallel circuits – Star-Delta transformation.

### Unit 02: AC FUNDAMENTALS

9 Hours

AC waveforms – standard terminologies – RMS and average values of Sinusoidal, Triangular and Square waveforms – Form factor, Peak factor – Resistance, Inductance, Capacitance in AC circuits – Impedance – RL, RC, RLC series circuits.

Dr.S.PADMA, M.E., Ph.D.,

Professor and Head,

Semester II

#### **Unit 03: ELECTRICAL MACHINES**

9 Hours

DC Generator: Construction and Working principle - EMF equation, Types and Applications. DC Motor: Working Principle of DC motor, Types and Applications. Single Phase Transformer: Construction, Working principle and Applications.

#### Unit 04: SEMICONDUCTOR DEVICES

9 Hours

Introduction to semiconductors – PN junction diode, Zener diode, BJT - Operations of NPN and PNP Transistors – Characteristics of Transistors in CE, CB and CC configuration, SCR, MOSFET, I-V characteristics. Diode Rectifiers: Working principle of half wave rectifier, Full wave rectifier, and Bridge rectifier.

#### Unit 05: POWER SUPPLY AND OPERATIONAL AMPLIFIERS

9 Hours

UPS: Components of UPS – Working principle of UPS – Types of UPS - Applications. SMPS - Block diagram- Principle of operation – Applications. Operational Amplifier: Ideal characteristics of Op-Amp – Inverting amplifier, non-Inverting amplifier – Voltage follower – Summing amplifier.

Т	heory: 45 Hrs	Tutorial:	Practical:	Project:	Total Hours: 45 Hrs
TEXT	BOOKS	- 1	. mousid us	r transfer	
1.	Edition 2018		_		S. Chand & Co Ltd, 28 <sup>th</sup>
2.	J.B. Gupta, "Funda Kataria & Sons.	amentals of Elect	rical and Electroni	cs Engineering", R	Levised edition 2012, S.K.
REFE	RENCES	5		-	
1.	Mehta V.K, Rohit 2016.	Mehta, "Princip	les of Electrical E	ngineering & Elec	tronics", S.Chand& Co. Ltd.,
2.	D. Roy Choudhury 2021.	y and Shail Jain,	"Linear Integrated	Circuits", sixth e	dition, New age international,
3.	S. Padma, C. San Sonaversity, Revis		S. Purushotham, "	Basic Electrical a	nd Electronics Engineering",
4.	P S Subramaniyan Edition, 2016.	n, "Basic concept	s of Electrical and	Electronics Engine	eering ", BS Publications, I

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12.1.2024 Version 1.0 Programme: B.E / B.. Tech

Regulations 2023

Dr. R.S. SABEENIAN, M.E., Ph.D., MBA., FIETE., FIE(I)., MIEEE., MISTE., MIUPRAI., Professor & Head of the Department, Department of Electronics and Communication Engineering, Sona College of Technology, Salem-636 005. Tamil Nadu.

Semester II



Design of Half and Full Adders, Half and Full Subtractors – Parallel Adders and Subtractors – BCD Adder – Code converters: BCD to XS-3, XS-3 to BCD - Magnitude Comparator – Decoders – Encoders – Multiplexers Demultiplexers - Design of ALU using adders - Introduction to Verilog HDL - Verilog HDL for 2 - bit adder - 2:1 multiplexer.

#### **Jnit 03: SEQUENTIAL LOGIC CIRCUITS**

9 Hours

Flip-Flops - SR - D- JK-T- Master Slave JK Flip-Flop - Conversion of Flip Flops - Design of Clocked Sequential Circuits - State Diagram - State Table - State Reduction and Assignment.

#### Unit 04: REGISTERS AND COUNTERS

9 Hours

Registers - Shift Registers - SISO - SIPO - PIPO - Synchronous Counters - Up-down Binary Counter -Ring Counter – Johnson Counters – Asynchronous Counters – Asynchronous Design Procedure – Race Free State Assignment - Hazards

#### Jnit 05: MEMORY AND PROGRAMMABLE LOGIC

9 Hours

Classification of memories: RAM - Static and Dynamic RAM, ROM - PROM, EPROM, EEPROM - Design of Memory using flip-flops -Implementation of combinational logic using PROM - Programmable Logic Array Programmable Array Logic.

Th	neory: 45 Hrs	Tutorial:	Practical:	Project:	Total Hours: 45 Hrs
TEXT	BOOKS				
1	M. Morris Mano a Edition, Pearson E		etti – 'Digital Desiş	gn with an Introduc	tion to the Verilog HDL', 6th
	S. Salivahanan and edition, 2018.	l S. Arivazhagan, '	"Digital Cîrcuits A	nd Design", Oxfor	d University Press, Fifth

#### REFERENCES

- 1. A. Anandkumar, 'Fundamentals of digital circuits, 4th Edition, Prentice Hall India, Paper back'2016.
- John F Wakerly 'Digital Design Principles and Practices', 4th Edition, Prentice Hall India, 2008.

9.00,-Dr. R.S. SABEENIAN, M.E., Ph.D., MBA., FIETE., FIE(I)., MIEEE., MISTE., MIUPRAI., Professor & Head of the Department, Department of Electronics and Communication Engineering, Sona College of Technology, Salem-636 005. Tamil Nadu.

Semester II

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CO3:	Analyse the n	manufacturing techn	ology	-				
CO4:	Describe the	agriculture and irrig	gation technology	-		· · · · · · · · · · · · · · · · · · ·	-	
CO5:	Explain the S	Scientific Tamil and	Tamil Computing	· · · · · · · · · · · · · · · · · · ·				
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T	heory: 15 Hrs	Tutorial:	Practical:	Project:	Total Hours: 15 Hrs
TEXT	BOOKS				
1.	தமிழக வரலாறு கே.கே. பிள்ளை (	– மக்களும் பண்ட வெளியீடு: தமிழ்நா		ம் கல்வியியல் ப	ணிகள் கழகம்).
2.	கணினித் தமிழ் – கீழடி –வைகை ந பொருநை – ஆற்ற	முனைவர் இல. க திக்கரையில் சங்க	சுந்தரம். (விகடன் ககால நகர நாகரி	பிரசுரம்). கம் (தொல்லியல் ந	
REFE	RENCES	× ×		a 2	
3.	Social Life of Tamils	(Dr.K.K.Pillay) A joi	nt publication of TN	TB & ESC and RMRL	– (in print)
4.	Social Life of the Tar Studies.	mils - The Classical F	Period (Dr.S.Singara	velu) (Published by:	International Institute of Tamil
5.	Historical Heritage of International Institu	of the Tamils (Dr.S.V te of Tamil Studies)	.Subatamanian, Dr.	K.D. Thirunavukkara	su) (Published by:
6.	The Contributions of Tamil Studies.)	f the Tamils to India	an Culture (Dr.M.Va	larmathi) (Published	by: International Institute of
7.	Keeladi - 'Sangam Ci Archaeology & Tami	ty Civilization on th I Nadu Text Book ar	e banks of river Vai nd Educational Serv	gai' (Jointly Publishe ices Corporation, Ta	d by: Department of mil Nadu)
8.	Studies in the Histor	y of India with Spec	cial Reference to Tai	mil Nadu (Dr.K.K.Pilla	ay) (Published by: The Author)
9.	Porunai Civilization ( Educational Services	Jointly Published by Corporation, Tamil	y: Department of Ar   Nadu)	chaeology & Tamil N	Nadu Text Book and
10	Journey of Civilizatio	n Indus to Vaigai (R	R.Ramakrishna) (Pub	lished by: RMRL) – F	Reference Book.

HOD HOD

Dr. M.RENUGA,
Professor & Head,
Department of Humanities & Languages,
Sona College of Technology,
SALEM - 636 005.

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CO3:	Analyse the	manufactu	ring techno	ology	**************************************					
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REFE	RENCES
1.	Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL – (in print)
2.	Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies.
3.	Historical Heritage of the Tamils (Dr.S.V.Subatamanian, Dr.K.D. Thirunavukkarasu) (Published by: International Institute of Tamil Studies).
4.	The Contributions of the Tamils to Indian Culture (Dr.M.Valarmathi) (Published by: International Institute of Tamil Studies.)
5.	Keeladi - 'Sangam City C ivilization on the banks of river Vaigai' (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)
6.	Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published by: The Author)
7.	Porunai Civilization (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)
8.	Journey of Civilization Indus to Vaigai (R.Ramakrishna) (Published by: RMRL) – Reference Book.

Dr. M.RENUGA, Professor & Head, Department of Humanities & Languages, Demonstrate of Technology, LEM - 63-005.

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	the gr	ven sent	lences.						aviolia				
CO5:	Interp	ret the	problem	s on A	ges & lo	garithm	and wo	rk on lo	gical re	asoning	and de	mons	trate
relucrio	good	vocabul	ary skill	by spot	ting erro	rs.	Jime: C	7 & 69	18' 908'T	reed sur	113 .29	R 90g	hi
Pre-requ	isite:							blems	ne-Pro	lemisphe	- 510	-Spb	ente
	Basic	English	languag	ge and G	Grammar	knowled	dge						
	Know	ledge in	Basic N	Mathema	atics				iqmos g				
A CON	est is				CO/PC	, PSO N	Aapping					3.19	
		(3/2/1 i	ndicates	the stre					ledium,	1-Weak			
		Pr	ogramm	e Outco	mes (PO	s) and P	rogramn	ne Specif	ic Outc	omes (PS	Os)		
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO 11	РО	12
CO1	3	3	3	2	1	1	1	3	3	3	2	3	
CO2	3	3	3	2	1	1	1	3	3	3	2	3	
CO3	3	3	3	2	1	1	1	3	3	3	2	3	ing Mil
CO4	3	3	3	2	1	1	1	3	3	3	2	011 3	X II
	1/2 12	3	3	2	1001	1	ovi <sub>1</sub> nin	3	3	3	2	3	
CO5	3												
CO5	3		1021.	00276	ourse A	ssessme	nt metho	nds	cal Rea	god" ad	ni2.2i	ideiM Nishii	
CO5	3		2021,	C		ssessme	nt metho	ods	ual Rea		direct		

CIE test II (30) - Theory

CIE test III (40) – Theory

Semester End Examination - NIL

Course end survey

Unit 01 6 Hours Percentage: Conversion of a Percentage into a Fraction - Conversion of a Percentage into a Ratio -Conversion of a Ratio into a Percentage - Percentage Change - Successive percentage - Problems Verbal Aptitude: Jumbled sentences & Reconstructions of sentences (PQRS) Unit 02 6 Hours Profit Loss: Types of prices - Profit - Loss - Percentage of Profit and Loss - Common Gain or Loss -Selling Price and Cost Price Equality – Successive Profit and Loss – Problems Verbal Aptitude: Sentence fillers two words & Idioms and phrase Unit 03 6 Hours Geometry: Angles – Complementary and Supplementary angles – Lines – Triangle – Types of triangles – Properties of Triangles – Problems Area, Perimeter / Circumference: Triangles - Rectangles and Squares - Parallelogram, Rhombus and Trapezium – Circles – Problems Surface area, curved surface area & Volume: Cuboid – Cube – Right circular cylinder – Right circular cone – Sphere – Hemisphere – Problems Verbal Aptitude: Reading comprehension. Unit 04 6 Hours Trigonometry: Value of Trigonometry ratios for particular values - Sign of Trigonometrical ratios -Trigonometrical ratios for sum or difference of angles Problems Verbal Aptitude: Spotting errors Unit 05 6 Hours Averages – Problems on ages – Logarithm - Logical Reasoning: Alpha Series – Venn diagram – Problems Verbal Aptitude: Writing captions for given pictures. **Total Hours: 30 Hrs** Tutorial: 0 Practical: 0 Project: 0 Theory: 30 Hrs **TEXT BOOKS** S.Chand and Dr.R.S.Aggarwal, "Quantitative Aptitude for competitive examinations", S Chand and 1.

Dr.S.Anita

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Company Limited 2019.

2.

Nishit K.Sinha, "Logical Reasoning and Data Interpretation", Pearson 2021.

T I	23CH	T 211		CH	EMIST	RY LA	BORAT	ORY		L	Т	P	J	C
U	23CH	L211	(Cor	nmon to	CSE, C	CSE (AIN	ИL), & С	CSD brai	nches)	0	0	2	0	1
Cours	e Out	comes						2						
At the	e end o	of the cou	rse, the	studen	t will l	be able	to							
CO1	L: A	Analyze th	ne amo	unt of	hydro	chloric	acid in	a give	n solu	tion by	pH m	etry an	d amou	ant of
	h	ydrochloi	ric acid	and ace	etic acio	d by cor	nducton	netric ti	tration.					
CO2	2: E	Estimate t	he am	ount of	coppe	er from	discar	ded PC	CBs, de	etermin	e the n	nolecul	ar weiş	ght of
	. a	polymer	and e	stimatio	on of ch	nromiur	n in ele	ctroplat	ting slu	dge by	Permar	iganom	etry.	
CO	3: I	Determine	e the a	mount	of feri	rous io	n in a g	given s	olutior	by po	tention	neter, d	determi	ne the
		ron conte			_	_					the ar	nount	of hard	iness,
Pro-ro	quisit	lkalinity	presen	it in ho	use ho	old wate	er by v	olumet	ric me	thod.	- 3			
116-16		Capable of	handli	ng bure	ette, pir	ette, be	aker, co	nical fl	ask and	l standa	rd mea	suring i	flask.	
		•			8	CO/PO,			English State					
						gth of co		And the second second						
COs	PO1		Program PO3	nme Ou PO4	PO5	s (POs) PO6	and Pro	ogramm PO8	re Spec P09	ific Outo		\$100 CO.	PSO1	PSO
CO1	3	2	103	1	103	1	107	100	1	1010	1011	1012	1301	2
301							-					36		
CO2	3	2		<b>-1</b> =		1	1		1					2
CO3	3	2		1		1	1		1					2
					Cot	ırse Ass	essmer	nt meth	ods		1			
		•			Direc							Inc	lirect	
CIE te	est I (1	o)			ŀ	RTPS (10	))							
Quiz 1	1 (5)				F	Record (	10)					Course	end surv	7017
CIE te	est II (1	15)			1	Total CI	E:60 ma	rks				Louise	ilu surv	vey
Quiz 2 (5)						Semester End Examination (40 marks)								
		(PERIME)	NTS	3.7										
1	Estima	ation of H	Cl acid	by pH	metry.			200		**************************************		and the second		
	Estim	ation of H	Cl by co	onducto	ometry	. (HCl v	s NaOF	<del></del>						5' 11
2	الللاد	adon on 11	Ci by C	onauch	Jiichy	. (11C1 V	311401	- <i>)</i>						

3	Estimation of mixture of acids by conductometry. (HCl + CH <sub>3</sub> COOH vs NaOH)	
4	Estimation of ferrous ion by potentiometric titration.	
5	Estimation of copper content from discarded PCBs by EDTA method.	
6	Determination of molecular weight of a polymer by viscosity measurements.	
7	Estimation of hardness of water sample by EDTA method.	
3	Estimation of alkalinity of water sample by indicator method.	
9	Estimation of chromium prepared from electroplating sludge by Permanganom	etry.
10	Determination of iron content in water by spectrophotometric method.	
	·	OTAL: 30 HOURS

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of for 1/24.

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				C PROGRAMMING LABORATORY					L	7	7	P	J	C		
t	23CP	L212	(Cor	nmon to	ADS, I	S, IT, CSE, CSE(AIML), CSD and ECE Branches)				0	(		2	0	1	
Cour	se Ou	tcomes														
At the	e end	of the cou	ırse, th	e stude	nt will	be able	to		, , ,							
(	CO1 [	Design and	d devel	op simp	le prog	rams us	sing bra	nching,	looping	g staten	nents		x I		-	
CO	_	Develop p												-		
CC		Write prog										dling				
Pre-re																
						CO	/PO, PS	O Mann	inσ					7		
			(3	3/2/1 indi	cates the				Strong, 2	-Medium	. 1-Weak					
COs									nme Spe							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12	PSO1	PSO2	PSO3	
CO1	1	2	3	2	2	2	-	-	-	-	-	-	1	2	2	
CO2	2	2	3	2	2	1		-	-	-	-	-	1	2	2	
CO3	2	3	3	2	2	1	-	-	-		-	-	1	2	2	
					(	Course	Assessi	ment m	ethods	-						
					Direc	t							Indire	ect '		
CIE te	,	5)			R	RTPS (10)						Course end survey				
Quiz 1					R	Record (10)						Cou	ise cita	sarvey		
CIE te	,	15)			- 1	otal CIE	,	arks								
Quiz I	1- (5)								ion (40	marks)						
List of	Expe	riments:						7	1011 (10	marks)						
1	•	rams using	Innut	Output	and ac	sianma	at state	nanta								
		rams using					nt stater	nents.			*					
		ams using				3										

- 4. Programs using Functions
- 5. Programs using Arrays
- 6. Programs using Structures
- 7. Programs using Strings
- 8. Programs using Pointers (both data pointers and function pointers)
- 9. Programs using dynamic memory allocation
- 10. Programs using Recursion
- 11. Programs using Files

Theory: 0 Hrs **Tutorial: 0** Practical 30 Hrs Project:0 Total Hours: 30 Hrs

12.1.2024 Version 1.0

Semester II

B.E / B.. Tech Regulations 2023

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Dept. of Computer Science and Engineering SONA COLLEGE OF TECHNOLOGY

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								LAND		L	Т	P	J	C			
U2:	BEE	L213B		ELEC	ELECTRONICS ENGINEERING LABORATORY												
				(Common to CSD & CSE(AI & ML))					0	0	2	0	1				
Cour	se Ou	tcomes						,			<u> </u>						
		of the co	arse, th	e stude	nt will	be able	to	- VNIMA SEL	_								
CO	l: /	Apply the	basic c	ircuit la	ws and	calcula	te vario	us para	meters	of DC a	nd AC	circuits					
CO	2.	Analyse th	ne nerfo	rmance	charac	teristics	of elec	tronic d	levices.	DC Mo	tor and	Single	Phase				
CO		ransform	711 -									~~~8-4	-				
CO	3:	Apply the	basic c	oncepts	of elec	trical ar	nd elect	ronics f	or real	time pro	blem s	olving.		1			
				4	(	CO/PO,	PSOA	<b>Tapping</b>	œ.								
		-(3/2	2/1 indi	cates the						-Mediur	n, 1-We	eak					
COs			Prograi	nme Oı	itcomes	s (POs)	and Pro	gramm	e Speci	fic Outc	Outcomes (PSOs)						
	PO	l PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12	PSO1	PSO2			
CO 1	3		2			3	2		3		3	3	3	3			
CO 2	2	2	2		3				3		2	3	2	3			
CO 3	3	2	2		3			, we	3		2	3	3	3			
			T		Cou	irse Ass	sessmei	nt meth	ods					7			
				I	Direct							Indir	ect				
CIE to Quiz I CIE to	I- (5) est II (	(15)		RTPS (10) Record (10) Total CIE: 60 marks							Course end survey						
Quiz 1	$\Pi$ - (5)			Semes	ster End	d Exami	ination	(40 mar	ks)								

### LIST OF EXPERIMENTS

- 1. Verification of Ohm's Law and Kirchhoff's Law.
- 2. Measurement of power and power factor for RLC series circuit.
- 3. Characteristics of PN Junction Diode and Zener Diode.
- 4. Characteristics of BJT in CB and CE Configurations.
- 5. Characteristics of SCR
- 6. Characteristics of MOSFET.
- 7. Measurement of ripple factor for half wave and full wave rectifier circuits.
- 8. Characteristics of operational amplifier as inverting and non-inverting amplifiers.
- 9. Load test on shunt motor.
- 10. Load test on single phase transformer.
- 11. Line and load regulation of SMPS.

Theory:	Tutorial:	Practical: 30 Hrs	Project:	Total Hours: 30 Hrs
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r.S.PADMA, M.E., Ph.D.,

<u></u>												
11230	OL1201		French - II		L	T	P	J	С			
	OLIZOI				1	0	0	0	1			
Course C	Outcomes											
At the en	d of the cour	se, the student w	ill be able to	-								
CO1:	Accept and	refuse of an invita	ation, give some ins	truction of do's	and do	n'ts, co	nverse	in				
600	commercia	centres, write an	invitation									
CO2:	Talls about	city, locate a place	in a city, ask further	er details, descri	be one	's home	etown					
CO3:	express ohl	inings around us, i	recite a past event, i ition, sell an object	dentify sign boar	rds, ex	press a	gree and	d disag	ree,			
CO4:	Talk about	one's goals expre	ss one's feelings w	rite a list of thin	on to d			. ,	4 11			
001	about weath	Talk about one's goals, express one's feelings, write a list of things to do, express an opinion, tall about weather, draft a mail response							, talk			
CO5:	Express on	Express one's interest and wish, describe a pet animal, express one's aversions encoun							irage			
	others, write	others, write to ask for a help, narrate a past event, write a biography										
			Course Assessment									
		Direc	t				Indirec	f				
CIE test I (30)			Total CIE: 100 marks									
CIE test II (30)			Semester End Exa	1	Course end survey							
CIE test II	I (40)			v.				J				
Unit 01:							3	Hours				
Hr 2: City	shopping and	d services, conjuga	ation: payer, mange	r and acheter, ne	gative	senten	ce		-			
Hr 4: Impe	erative senter	ice, food and beve	rages, utensils, cutle	eries corckeries								
Unit 02:	mmanve arno	ies, quantities, pro	onoun 'en', express	appreciation, wr	ite an i	nvitatio						
	and localitie	Comingation		1			3 ]	Hours				
Hr 10: Tra	and localities	s, Conjugation. pr	endre, adjectives of sition of place, degr	place, pronoun	'y'							
Hr 12: Asl	king informat	ion about a new p	lace, describe a city	ces of companis	OH							
Unit 03:							3 1	Hours				
Hr 14: Thi	ings in a store	, conjugation : fai	re, imparfait 2, pass	é composé	-			iouis				
Hr 16: Thi	ings in a repa	iring shop, compu	ter, relative pronour	ns: que and qui								
Hr 18: Imp	perative negative	tive, express oblig	ation and interdiction	on, online sale ar	nd resp	onse						
Jnit 04:		-		2			3 I	Hours				
Hr 20: Pro	fessions, con	jugation: croire, v	oir, recent past tense	2								
Hr 24: 1ra	veling forma	lities, expressing a	bout health condition	on, future tense								
Jnit 05:	noun COD, u	ark about weather	condition, write abo	out one's plans a	nd pro	jections						
	izenship and	solidarity conjuga	tion: connaitre and	savoir denuis vo	nand		3 H	Iours				
Hr 28: Imp	parfait vs pass	sé composé, nature	e and environment,	indirect propoun	s penda s COI	allt						
Hr 30: Ani	mals, conditi	onal, talk on supp	orting others, write	a biography	5 001							
Theor	y: 15 Hrs	Tutorial:	Practical:	Project:		Total	Hours:	15 Hrs				
TEXT BOO												
1. The	course facul	ty will provide rel	evant audios, videos	s, handouts and r	notes.							
2. Boo	oks : Saison (1	Méthode de frança	is, cachier d'activit	és)								
3. Ref	erence books	: La conjugaison,	Dondon, Echo	9								

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B.E / B. Tech Regularione 10236

U23	OL1202	*	German - II		L	T	P	J	С			
					1	0	0	0	1			
Course (	Outcomes				2	-		1	L			
At the en	nd of the cour	se, the student wi	ll be able to	*								
CO1:	Use gramm	atical expressions	appropriately in da	y-to-day conver	sation.	2						
CO2:	Make them	frame simple sente	ences /questions.									
CO3: Accentuate to start and sustain basic conversation												
CO4:	CO4: Helps them articulate thoughts in German								,			
CO5:	Identify the											
		C	ourse Assessment	methods								
	Direct							Indirect				
	CIE test I (30) Total CIE: 100 marks						•					
	CIE test II (30) CIE test III (40) Semester End Examination: NIL					Course end survey						
Unit 01:	11 (10)		*				2.1	Hours				
Nominati	ve/accusative	case, adjectives		, a			<u> </u>	ilouis				
Unit 02:							31	Hours				
Modes of	transportation	n, orientation, givin	g/understanding si	mple directions		L						
Unit 03:							3 1	Hours				
• Fo	ood and bevera	iges, Modal verbs,	Separable verbs					180 0	j.			
Unit 04:							3 I	Hours				
• Sin	mple sentence	s using modal / sep	parable verbs				10					
Jnit 05:					-		3 F	lours				
• Ar	ticles of cloth	ing										
Theor	ry: 15 Hrs	Tutorial:	Practical:	Project:		Total 1	Hours:	15 Hrs				
TEXT BO	OKS					<del></del>	Α					
1. Net	tzwerk A1	100			,							

HOD 13 July.

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U23	OL1203		Japanese - II		L	Г	P	J	С
022	021200		oupanese - 11				0	0	1
	Outcomes								
At the en	nd of the cour	se, the student wi	ll be able to						
CO1:	Use verbs in	polite conversation	on or for dissuasion	and describe two	differer	nt ac	tivities		
CO2:	Demonstrat describe exp	e the application operiences	f causative verbs and	those that expre	ess abilit	y or	possib		
CO3:	Use plain-st	yle expressions, th	ose that state opinio	ns, and verbs and	d adjecti	ves t	hat go	with n	ouns
CO4:	Express sen	tences that use 'v	vhen' and 'if' and t	hose that describ	be how	servi	ices are	giver	anc
CO5:	Read 126 le and II to pas	etters of Kanji, and ss the Japanese Lar	demonstrate adequage Proficiency	ate knowledge of the contract (JLPT) for the contract (JLPT) for the contract (JLPT) and the contract (JLPT) are the contract (JLPT) and the contract (JLPT) are the contract	f the les	sons	learnt	in Lev	els l
			ourse Assessment n						
		Direct				1	Indirec	f	
CIE test 1	(30)		Total CIE: 100 marl	, (S					
CIE test I	I (30)		Semester End Exan		tion: NIL Course end survey				
Unit 01:	(23)					T	2	Hours	
	Jords and work	s expressing reque	octo / Vanii 1 10		1,		3	nours	
Hr 3-4: A	sking for pern	nission; making sta activities / Kanji 2	atements to prohibit	something / Kan	ji 11 <b>-</b> 20			·	
Jnit 02:		-					3	Hours	
Hr 7-8:	Verbs that exp	ress 'I have to'	/ Kanji 31-40						
			ossibility / Kanji 41	-50					
	Describing ex	kperience / Kanji 5	1-60						
Jnit 03:			B g x				3 ]	Hours	
		pressions / Kanji (							
		ike 'I think that	d adjectives / Kanji	R1 00					
Jnit 04:	Quanty mg m	ouns with veros an	d adjectives / Kanji	51-90		T	2 1	Hours	
	-	iging 'Whon '		***************************************			31	iouis	
Hr 19-20:	Expressions u		Kanii 91-100						
Hr 21-22:	Describing th	e giving and receiv	Kanji 91-100 ving of services / Ka nii 111-126	nji 101-110					
Hr 21-22:	Describing th		ving of services / Ka	nji 101-110		· ,	3]	Hours	
Hr 21-22: Hr 23-24: J <b>nit 05:</b>	Describing th	e giving and receivising 'If' / Kar	ving of services / Ka	nji 101-110			31	Hours	
Hr 21-22: Hr 23-24: Jnit 05: Hr 25-26: Hr 27-28:	Describing th Expressions u Preparing for Preparing for	e giving and receivising 'If' / Kar  JLPT N5 JLPT N5	ving of services / Ka	nji 101-110			3]	Hours	
Hr 21-22: Hr 23-24: Jnit 05: Hr 25-26: Hr 27-28: Hr 29-30:	Describing the Expressions user Preparing for Preparing fo	e giving and receivasing 'If' / Kar  JLPT N5 JLPT N5 JLPT N5	ving of services / Ka	nji 101-110			3 ]	Hours	
Hr 21-22: Hr 23-24: Jnit 05: Hr 25-26: Hr 27-28: Hr 29-30:	Describing the Expressions to Preparing for	e giving and receivising 'If' / Kar  JLPT N5 JLPT N5	ving of services / Ka	nji 101-110 Project:	То	tal I	3 l		3
Hr 21-22: Hr 23-24: Jnit 05: Hr 25-26: Hr 27-28: Hr 29-30: Theo	Preparing for Pr	e giving and receivating 'If' / Kar  JLPT N5  JLPT N5  JLPT N5  Tutorial:	ving of services / Kanji 111-126  Practical:	Project:	To	tal I			3
Hr 21-22: Hr 23-24: Jnit 05: Hr 25-26: Hr 27-28: Hr 29-30: Theo	Preparing for Pr	e giving and receivating 'If' / Kar  JLPT N5  JLPT N5  JLPT N5  Tutorial:	ving of services / Ka nji 111-126	Project:	То	tal I			3

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U23OL1204		1	Korean - II		L	Т	P	J	С	
0					1	0	0	0	1	
	Outcomes									
		se, the student w	ill be able to	V	-			5		
CO1:	Identify tim									
CO2:		date and days of	the week		3					
CO3:		ation and places		······································						
CO4:	Explain des									
CO5:	Construct si	imple sentences /								
		(	Course Assessment	methods						
		Dire	<b>et</b>				Indirec	t		
CIE test I			Total CIE: 100 ma							
	CIE test II (30)		Semester End Exa		Course end survey					
CIE test I	II (40)									
Init 01: Time						3 Hours				
Talking a	bout time								-	
Unit 02: I	Date					·	3	Hours		
		d days of the weel								
Talking a	bout doing so	mething in the pas	st		21	*I	S.			
Unit 03:	Location		a legge				3	Hours		
Talking a		mething at a locat	ion			u e,	,			
Jnit 04:	Direction	*					3]	Hours		
Talking al	out direction	S					***************************************			
Jnit 05: F							3 ]	Hours		
		nething in the fut	ure					,		
	oout plans for out hope for									
				D				-		
1 Heol	ry: 15 Hrs	Tutorial:	Practical:	Project:		Total 1	Hours:	15 Hrs	1	
REFERENC		Tutorial:	Practical:	Project:		Total I	Hours:	15 Hrs		

M- 7 7 2 2 24.

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