## SONA COLLEGE OF TECHNOLOGY, SALEM-5

(An Autonomous Institution)

# B.Tech- Artificial Intelligence and Data Science

### **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: Artificial Intelligence and Data Science

S.No	Course Code			Т	P	J	С	Category	Total Contact Hours	Course Type*
	1	Theory	Cou	rses						
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.	U23PHY103A	Physics For Information Science	3	0	2	0	4	BS	75	TL
4.	U23PPR105	Problem Solving using Python Programming	3	0	0	0	3	ES	45	Т
5.	U23BEE106A	Basics of Electrical and Electronics Engineering	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
		Practica	ıl Co	ours	es					
8.	U23PPL112	Python Programming Laboratory	0	0	2	0	1	ES	30	L
9.	U23BEEL113	Basics of Electrical and Electronics Engineering Laboratory	0	0	2	0	1	ES	30	L
-			otal	Cre	dits		20			
	7	Optional Lang	uage	Co	urses	**				
10.	U23OL1101	French							15	T
11.	U23OL1102	German	1	0	0	0	1	OL	15	T
12.	U23OL1103	Japanese	1	U	0	0	1	OL	15	T
13.	U23OL1104	Korean							15	T

\*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

\*\*Students may opt for foreign languages viz., German/French/Japanese/Korean with additional one credit

(Not accounted for CGPA calculation)

Approved By

M. 10 [0] 23	J. Alland	- Nivakuma	- duland	
Chairperson, Science and Humanities BoS	Chairperson, IT BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr.M.Renuga	Dr.J.Akilandeswari	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil
	9			Kumar

Copy to:-

HOD/Artificial Intelligence and Data Science, First Semester B.Tech. ADS Students and Staff, COE

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

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

Branch: B. Tech Artificial Intelligence and Data Science

S.No	Course Code	Course Title Theory		Т	P	J	С	Category	Total Contact Hours	Course Type*
		Theory of	cour	ses	-					
1.	U23ENG201A	Technical English	2	0	0	0	2	HS	30	T
2.	U23MAT202A	Discrete Mathematical Structures	3	1	0	0	4	BS	60	TT
3.	U23CHE204A	Chemistry for Information Science	2	0	2	0	3	BS	60	TL
4.	U23CPR205	Programming in C	3	0	0	0	3	ES	45	Т
5.	U23IT201	Microprocessor and Microcontroller	2	0	0	0	2	ES	30	Т.
6.	U23EGR207	Engineering Graphics	3	0	0	0	3	ES	45	T
7.	U23TAM201	தமிழரும் தொழில்நுட்பமும்/ Tamils and Technology	1	0	0	0	1	HS	15	Т
8.	U23GE201	Basic Aptitude- II	2	0	0	0	0	AC	30	T
	- x	Practica	cou	rses		L				L
9.	U23CPL212	C Programming Laboratory	0	0	2	0	1	ES	30	L
10.	U23IT202	Microprocessor and Microcontroller Laboratory	0	0	2	0	1	ES	30	L
				Cre			20			
		Optional Langu	age (	Cou	rses*	*	3.6			
11.	U23OL1201	French -II							15	T
12.	U23OL1202	German -II	1					OL	15	T
13.	U23OL1203	Japanese -II		0	0	0	1	OL	15	T
14.	U23OL1204	04 Korean -II						и	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

#### Approved By

d'faj.	J. dularo >	Anrakanar 8.2.24	J. dulam >	2:8
Chairperson, Science and Humanities BoS	Chairperson, IT BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr.M.Renuga	Dr.J.Akilandeswari	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil Kumar

Copy to:-

HOD/IT, Second Semester B. Tech ADS Students, Staff and COE

PRINCIPAL
SONA COLLEGE OF TECHNOLOGY
SALEM-636 005

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

#### Sona College of Technology, Salem

#### (An Autonomous Institution)

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3.	U23PHY103A	Physics For Information Science	3	0	2	0	4	BS	75	TL
4.	U23PPR105	Problem Solving using Python Programming	3	0	0	0	3	ES	45	Т
5.	U23BEE106A	Basics of Electrical and Electronics Engineering	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
		Practica	ıl Co	ours	es					
8.	U23PPL112	Python Programming Laboratory	0	0	2	0	1	ES	30	L
9.	U23BEEL113	Basics of Electrical and Electronics Engineering Laboratory	0	0	2	0	1	ES	30	L
-			otal	Cre	dits		20			
	7	Optional Lang	uage	Co	urses	**				
10.	U23OL1101	French							15	T
11.	U23OL1102	German	1	0	0	0	1	OL	15	T
12.	U23OL1103	Japanese	1	U	0	0	1	OL	15	T
13.	U23OL1104	Korean							15	T

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	9			Kumar

Copy to:-

HOD/Artificial Intelligence and Data Science, First Semester B.Tech. ADS Students and Staff, COE

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CO2	2: I	Develop sp	peaking	skills f	or self	-introdu	ction, d	leliverir	ng spee	ches and	l techni	cal pre	sentatio	n
CO3	3: I	Demonstra	te effec	ctive lis	tening	skills fo	r acade	mic and	profes	sional p	urpose	S		
CO <sub>4</sub>	l: \\	Vrite ema	ils and	formal	letters	and bui	ld resu	mes and	constr	uct para	graphs	;		
COS	;: I	Develop sp	peaking	skills l	oth in	terms o	f fluenc	y and c	omprel	nensibili	ty			
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		10) (Practi /seminar/		)	(	SEE – TI narks)			Course end survey					

- 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:

BoS Date: 08. 07. 2023

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CO1:	find	the rank	k of the	matrix a	nd solve	linear s	ystem of	f equation	ons by di	rect and i	ndirect n	nethod	S		
CO2:	appl	y the co	ncepts o	f vector	spaces a	and linea	ar transfe	ormation	ns in real	world ap	plication	ns			
CO3:	appl	y the co	ncepts o	f eigenv	alues ar	d eigen	vectors o	of a real	matrix a	nd their p	roperties	s to dia	gonaliz	e the	3
CO4:	find		lor's ser	ies exna	nsion I	acohians	and the	maxim	a and mi	nima of f	unctions	of two	variabl	00	
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nit 02	VEC	TOR S	PACES										9 H	our	s
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Unit 04	MULTIVARIABLE CALCULUS		*	9 Hours
two va	ons of several variables – partial differer riables – maxima and minima of fund a by Lagrange's method of undetermined	ctions of two variables	- Jacobians - Taylor without constraints -	's theorem for functions of - constrained maxima and
Unit 05	MULTIPLE INTEGRALS			9 Hours
	e integrals - change of order of integrat integrals in Cartesian coordinates - tripl			
	,			
	Lis	st of MATLAB Progra	ams	
1.	Programs based on elementary opera	ations on matrices		add that I wa
2.	Computing the rank of a matrix	-		
3.	Finding eigenvalues and eigenvector	rs of a matrix		
4.	Finding partial derivatives of function	ons of several variables		
5.	Computing stationary points of func	tions of two variables		
6.	Taylors series expansion of function	s of two variables		
7.	Evaluating double integrals			
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 Hours: 75 Hrs
TEXT	BOOKS:			
1.	T. Veerarajan, "Linear Algebra and Par	rtial Differential Equation	ns", McGraw Hill Pul	olishers, 1 <sup>st</sup> Edition, 2018.
2.	T. Veerarajan, "Engineering Mathemat	ics for Semesters I & II"	McGraw Hill Publis	hers, 1st Edition, 2019.
3.	W. Yang, Y. K. Choi, K. Jaekwon, M. MATLAB", CRC Press Publishers, 1st	C. Kim, H. J. Kim and T Edition, 2017.	. Im, "Engineering M	athematics with
REFE	RENCE BOOKS:		n iii dh n iii	2010
1.	S. Lipschutz and M. L. Lipson, "Linear	r Algebra", McGraw Hill	Publishers, 6" Edition	on, 2018.
2.	E. Kreyszig, "Advanced Engineering N	Mathematics", Wiley Pub	lishers, 10 <sup>th</sup> Edition,	Reprint, 2017.
3.	C. Prasad and R. Garg, "Advanced Eng	gineering Mathematics",	Khanna Publishers, I	Edition, 2018.
4.	B. V. Ramana, "Higher Engineering M	Iathematics", McGraw H	ill Publishers, 29 Re	print, 2017.
5.		thematics", Khanna Pub	lishers, 44" Edition, 2	.018.
6.	D. Xu, "Calculus problem solutions wi	ith MATLAB", Walter de	e Gruyter Publishers,	1 Edition, 2020.

Dr. S. JAYABHARATHI

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

Dr. M. RENUGA

BoS - Chairperson Science and Humanities Sona College of Technology Salem - 636 005

BoS Date: 08. 07. 2023

Dr. S. JAYABHARATHI ASSOCIATE PROFESSOR & HEAD DEPARTMENT OF MATHEMATICS, SONA COLLEGE OF TECHNOLOGY, SALEM-636 005. Tamilnadu. Ph: 0427 - 4099999. B.E./B.Tech Regulations 2023

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

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Cours	e Outo	omes	J.											
At the	end o	f the cou	rse, the	studen	t will	be able	to							
CO1	ı: A	nalyse th	e relatio	on betw	een ar	rangeme	nt of at	oms and	d mater	ial prop	erties.			
CO2	2: D	iscuss the	e dual n	ature o	f matte	er and rac	diation	and the	applica	ation of	wave na	ature of	particl	es.
CO	3: D	escribe tl	ne basic	compo	nents	of lasers								
CO4	ı: D	ifferentia	te the e	lectrica	l and t	hermal c	onduct	ivity of	metals.					8 11
COS	5. E	lucidate t	he class	sificatio	n and	theory o	f semic	onducti	no mate	erials				
Pre-re	quisite		aladaa i	n atom	io mby	oise and	ontion							
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CIE te	est III (1	10)			'	Total CII	E: 50 ma	arks			Cot	iise Liid	Juive	У
Assign	nment/	Seminar/	Quiz (5	<u>)</u>		Semester	End E	xamina	tion (50	))				
	ODE	STAL P	TELOTO	C								1	9 Hour	

Importance of crystals - Types of crystals - Basic definitions in crystallography (Lattice -space lattice - unit cell - lattice parameters - basis) - Seven crystal systems and fourteen Bravais lattices - Lattice planes and Miller indices - Interplanar distance - d spacing in cubic lattice - Calculation of number of atoms per unit cell - Atomic radius - Coordination number and Atomic Packing Factor for SC, BCC, FCC and HCP structures - Polymorphism and

allotropy - Crystal imperfections - Point, line and surface defects - Burger vector.

#### Unit 02: QUANTUM PHYSICS

9 Hours

Limitations of classical theory - Dual nature of matter and radiation - Particle nature of radiation - Compton effect - Expression for Compton shift (no derivation) - Wave nature of matter - de Broglie waves - Heisenberg's Uncertainty principle - Schrödinger'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 - Expression for 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: 30 Project:-- Total Hours: 75 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.
- 2. B. K. Pandey and S. Chaturvedi, "Engineering Physics", Cengage Learning India Pvt. Ltd., Delhi, 2021.
- 3. Arthur Beiser, Shobhit Mahajan, S. Rai Choudhury, "Concepts of Modern Physics", McGraw-Hill (Indian Edition), 2017.
- A R. Wolfson, "Essential University Physics", Volume 1 & 2. Pearson Education (Indian Edition), 2009.

5. William D. Callister Jr., David G. Rethwisch, "Callister's Materials Science and Engineering", 10th Edition, Global Edition 2019.

LIST	OF EXPERIMENTS		30 Hours
1	Determination of the thickness of a thin apparatus.	wire by forming interference fringe	s using air wedge
2	Determination of the velocity of ultraso liquid using ultrasonic interferometer.	•	
3	Determination of specific resistance of	a given wire using Carey Foster's br	idge.
4	Determination of laser wavelength using	g diode laser.	2
5	Determination of particle size of lycopo	dium powder using diode laser.	
6	Determination of acceptance angle and	numerical aperture of an optical fibr	e using diode laser.
7	Determination of Wavelength of Mercu	ry spectrum using spectrometer.	=
8	Determination of band gap of the given	semiconductor diode.	

Unu

Dr. C. SHANTHI, M.Sc., M.E., Ph.D.,
Professor of Physics
Head, Department of Sciences
Sona College of Technology (Autonomic )
SALEM-636 005.

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

				PRO	<b>DBLEN</b>		LVING			HON	L	T	P	J	C
U	23P	PR10	)5				GRAM								
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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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Programmer: BE & B Tech

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

B.E / B.. Tech Regulations 2023



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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	<b>Г ВООКЅ</b>				
1.	Reema Thareja, "Edition 2023.	Problem Solving a	and Programming	with Python" Oxi	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: He	ow to Think Like	e a Computer Sc	ientist" O'Reilly Media, 2nd
4.	Timothy A Rudd	" Evploring Putho	n" Mc-Graw Hill	Education (India)	Drivata Ltd. 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

COs		Programme Outcomes (POs) and Programme Specific Outcomes (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			
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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Programmer: BE & B Tech

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U23F	BEE106	A	BASIC	S OF E		RICAL		LECTR	ONICS	L	T	P	J	C
		0.37			ENG	GINEER	RING			3	0	0	0	3
					(Co	nmon to	CSE,I	Γ and A	DS)					
Course	Outcom	ies											The state of	
At the e	nd of th	e cours	e, the st	udent w	vill be a	ble to								
CO1:	Ana	lyse th	e basic	circuit l	aws ar	d find t	he DC	circuit p	aramet	ers.	1 4		LICH	- E
CO2:	Ana	lyse th	e AC ci	rcuits a	nd dete	ermine t	he vario	ous para	meters	of AC	circuits.	la sula		
CO3:	Exp	lain the	e constr	uction a	and wo	rking pr	inciple	of Elec	trical n	nachines	and Tr	ansform	ner.	
CO4:	Des	cribe tl	ne work	ing prin	ciples	and cha	racteris	tics of s	semicor	nductor	devices	-51 0 79 Î		nart.
CO5:	Des	cribe tl	ne work	ing prir	ciples	of opera	ational	amplifie	ers and	UPS wit	th annli	cations		
		e Gi <sup>2</sup> Th	son e Jr.	6 P	- Pies	Gallery 38		The state of the s	15 4114		п иррп	urari	Se dila	1
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		(	3/2/1 inc	licates tl		CO/PO,			no 2-N	1edium,	I-Weak	1		
										c Outcor		Os)		
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10		PO12	PSO1	PSC
CO1	3	3	2		3	2	2	2	3		1	2	3	3
CO2	3	3	2		3	2	2	2	3	4.0	1	2	3	3
CO3	2	3	2		2	2	2	2	3		1	2	3	3
CO4	2	3	2		2	2	2	2	3		1	3	3	3
CO5	2	3	2		2	2	2	2	3		1	3	3	3
					Co	urse Ass	essmen	t metho	ds				Marine.	
100000				D	irect						and the same	Indire	ect	
CIE test						bjective		5)						
CIE test	II (8)				A	ttendano	æ (5)				Co	urse end	curvey	
CIE test	(8) III				T	otal CIE	: 40 ma	rks			Co	ui se ciid	Survey	
Assignm	ent/sem	inar/Qu	iz (5)		S	emester	End Exa	aminatio	n (60)					
nit 01: I	C FU	NDAM	IENTA	LS	u, A								9 Hour	S
Electrica in series	_												w – Res	sistor
nit 02: A	C FU	NDAM	IENTA	LS				-				T	9 Hour	s
					t 02: AC FUNDAMENTALS  C waveforms – standard terminologies – RMS and average values of Sin									

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#### 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.

T	heory: 45 Hrs	Tutorial:	Practical:	Project:	Total Hours: 45 Hrs
TEXT	BOOKS	m. in sign		an des 6 gilloda.	
1.	B.L. Theraja, "Fu Edition 2018	ndamentals of Ele	ctrical Engineering	g & Electronics", S	Chand & Co Ltd, 28 <sup>th</sup>
2.	J.B. Gupta, "Func Kataria & Sons.	lamentals of Elect	rical and Electronic	cs Engineering", R	evised edition 2012, S.K.
REFE	RENCES				
1.	Mehta V.K, Rohi 2016.	t Mehta, "Princip	les of Electrical E	ngineering & Elec	tronics", S.Chand& Co. Ltd.,
2.	D. Roy Choudhur 2021.	ry and Shail Jain,	"Linear Integrated	Circuits", sixth ed	lition, New age international,
3.	S. Padma, C. Sa Sonaversity, Revi		S. Purushotham, "	Basic Electrical a	nd Electronics Engineering",
4.	P S Subramaniya Edition, 2016.	m, "Basic concept	s of Electrical and	Electronics Engine	eering ", BS Publications, I

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

Professor and Head, Department of EEE, Sona College of Technology Salem-636 005. Tamil Nadu.

III	3BEEL113 BASICS OF I			S OF E	LECTI	RICAL	AND E	LECTR	ONICS	L	T	P	J	C
UZ	JDEEL	113		ENGI	NEERI	NG LA	BORA	TORY		0	0	2	0	1
0.5-1	ATT		72/10		(Cor	nmon to	CSE,I	T and A	DS)					
Cours	se Outc	omes	Village .				2 1 20 10 10 10 10 10 10 10 10 10 10 10 10 10							
At the	e end o	f the cou	ırse, the	studen	ıt will k	e able	to							
CO	l: A	pply the	basic ci	rcuit la	ws and	calcula	te vario	us parai	neters o	of DC a	nd AC	circuits.		
CO		nalyse t		ormanc	e chara	acteristi	ics of	electron	ic devi	ces, DO	C Moto	or and	Single	Phase
CO	3: A <sub>1</sub>	pply the b	oasic con	cepts of	electric	al and e	lectronic	es for rea	ıl time pı	roblem s	olving.			
		(3/2	2/1 indic	cates the				lapping on) 3-Str		Mediun	n, 1-We	ak		
00			Progran	nme Oı	nme Outcomes (POs) and Programme Specific C						omes (	PSOs)		
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12	PSO1	PSO2
CO1	3		2			3	2		3		3	3	3	3
CO2	2	2	2		3				3		2	3	2	3
CO3	. 3	2	2		3		1.00		3		2	3	3	3
					Cou	rse Ass	sessmer	nt meth	ods					
				I	Direct							Indir	ect	
Quiz 1	est I (15 I- (5) est II (1					rd (10)	0 marks			С	ourse e	end surv	ey	

#### LIST OF EXPERIMENTS

- 1. Verification of Ohm's Law and Kirchhoff's Law.
- Measurement of power and power factor for RLC series circuit.
- Characteristics of PN Junction Diode and Zener Diode.
- Characteristics of BJT in CB and CE Configurations.
- Characteristics of SCR
- Characteristics of MOSFET.
- 7. Measurement of ripple factor for half wave and full wave rectifier circuits.
- 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.

**TOTAL: 30 Hours** 

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Computer Science / Information Technologe partment of Technology

Sona College of Technology

Salem-636 005. Tamil Nadu

	TAM101	கமிமர்	<b>மரபு</b> / Heritage of Tamils	L	T	P	J	С
		2		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					
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	Cour	se end	survey	
	` /	மற்றும் இ	லக்கியம்			3	Hours	3
கருத்து	Jக்கள் -	இலக்கியத்த தமிழ்க்	க்கியங்கள் - சங்க இலக் நில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக நி இலக்கியம், ஆழ்வார்கள	ருக்கு நத்தில்	தளில் சப	மேல ஹ	ாண் பெ	மைக் எத்த
கருத்து சமயங் சிற்றில வளர்ச்ச	ுக்கள் - களின் தா ்க்கியங்கள 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	ருக்குற த்தில் ர் மற் வார்ச்சி ர் பங்	தளில் சப நும் ந ி <b>-</b> த களிப்ப	மேல தண நாயன் நமிழ் 1.	ாண் பெ மார்க இலக்	மைக் எத்த ள் கிய
கருத்து சமயங் சிற்றில வளர்ச்ச	த்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> சி <b>ற்</b>	இலக்கியத்த தமிழ்க் க்கம் - பக்தி 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> ை	ருக்குற த்தில் ர் மற் பளர்ச்சி ர் பங்	தளில் சப நும் ந ப – த களிப்ப <b>ர –</b>	மேல தன் தாயன் தமிழ் 1.	ாண் பெ மார்க இலக் Hour	மைக் எத்த ள் ககிய
கருத்து சமயங் சிற்றில வளர்ச்ச அலகு 2 மற்றும் செய்யு குமரிமு வீணை	தக்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> <b>சிற்</b> நடுகல் பு அவர்கள ம் களை சனையில்	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	ருக்குற த்தில் ப் மற் பார்ச்சி ப் பங் சிலை எர், செ ப்புறத்	தளில் நும் ந களிப்ப கள் - பாம்ன - மிரு	மேல் தை தமிழ் பழங் தம்வா து்	on ண்ன பெ மார்க இலக் Hour பகுடிய பக்கள் ம், ப	மைக் ாத்த ள் க்கிய க பினர் தேர்
கருத்து சமயங் சிற்றில வளர்ச்ச அலகு 2 மற்றும் செய்யு குமரிமு வீணை கோவி	தக்கள் - களின் தா க்கியங்கள் சியில் பார 2 : <b>மரபு -</b> <b>சிந்</b> நடுகல் பு அவர்கள ம் கலை தனையில் , யாழ், ல்களின் ப 3: <b>நாட்டுப்</b> பு	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	ருக்குற த்தில் ர் மற் பளர்ச்சி <b>ர் வண</b> சிலை எர், செ ப்புறத் பெடு	தளில் தும் ந தளிப்ப தள் – தள் – பாம்ன 5 செ	மேல் தன் தமிழ் பழங் தம்வர் தம்வ தரங்க தார	் பெரும் இலக் இலக் பெரும் பகுடிய பகுடிய பக்கள் ம், ப வாழ்	மைக் எத்த எர் கேய தேர் ஹேற
கருத்து சமயங் சிற்றில வளர்ச்ச அலகு 2 மற்றும் செய்யு குமரிமு வீணை கோவிச	தக்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> சிற் நடுகல் பு அவர்கள ம் களை நனையில் , யாழ், ல்களின் ப சேருக்கத	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றும் பாறை ஓவி பக் கலை நதல் சிற்பங்கும் திருவள்ளுவம் நாதஸ்வரம் ங்கு தக் கலைகள்	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	ருக்குற த்தில் ர் மற் பளர்ச்சி ர் பங் சிலை எர், செ பெறத் கள் பெற	தளில் தும் ந தன் - த களிப்ப தள் - பாம்ன - மிரு ாருளா	மேல் தன் தமிழ் பழங் தம்வ தகங்க தார	ாண் பெ மார்க இலக் பகுடிய ங்கள் ம், ப வாழ் Hour	மைக் எத்த ள் கேய் தேர் வில்
கருத்து சமயங் சிற்றில் வளர்ச்ச அலகு 2 மற்றும் செய்யு குமரிமு வீணை கோவிச அலகு 3	பக்கள் - களின் தா க்கியங்கள சியில் பார 2 : <b>மரபு -</b> சிற் நடுகல் பு அவர்கள ம் கலை அவர்கள ம் கலை அவர்கள ம் கலை அவர்கள அவர்கள அவர்கள அவர்கள அவர்கள அவர்கள அவர்கள அவர்கள அவர்கள அவர்கள அவர்கள	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றும் பாழை ஓவி பக் கலை நதல் சிற்பங்க ந தயாரிக்கும் திருவள்ளுவ திருவள்ளுவ நாதஸ்வரம் ங்கு மக் கலைகள் த்து, கரகாட்டர்	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>	ருக்குற த்தில் ப் மந் ப் பங் சிலை எ், செ ப்புறத் கள் பெ தகள் கத்த	தளில் தம் ந தனிப்ப தள் – தள் – பாம்ன - மிரு எருளா	மேல் தன் தமிழ் பழங் தய்வா தய்வா தந்க தார	பாண் பெர்க 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
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	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.

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U23T.	AM101	தமிழர் மர	니 / Heritage of Tamils	L	T	P	J	С			
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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	Describe Thinai Concept of Tamils									
CO5:	Analyse Co	lture									
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3	கீழடி – மவமக நதிக்கமரயில் ெங்ககொல நகர நொகரிகம் (ததொல்லியல் துமறதவளியீடு)
4	பாருமந – 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

		Pr	ogramm	e Outco	mes (PO	s) and P	rogramm	e Specif	ic Outc	omes (PS	Os)	
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						
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

. .

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	L	T	P	J	C	
	021101			1	0	0	0	1
Course (	Outcomes							
At the er		se, the student wi						
CO1:	Read Frenc English sou		ench phonitis, pract	ice French accents	different	iate Fre	nch and	ì
CO2:		neself, talk about s I politely in a conv	omeone, ask others ersation	personal informati	on, identi	fy an ob	ject, as	k
CO3:			cement, describe abo	out neighbours, wr	te a small	portrai	t	
CO4:	justify a cho	oice, express one's	out one's hobbies, a preferences, write a	list of needs				blog
CO5:	Suggest to	do something, appr	eciate something, ta	lk about a movie,	write a po	stal card	1	
		C	ourse Assessment i	nethods				
		Direc	t			Indire	ct	
CIE test	I (30)		Total CIE: 100 mai	ks	- Alexandre			
CIE test	II (30)		Semester End Exa	mination: NIL	Cou	rse end	survey	,
CIE test	III (40)	3.040			**************************************			
nit 01:						3	Hours	1
Hr 6: De		countries, colors, numbers 0-20, wri	days & months te about one's ident	ification		1		
nit 02:	<del></del>	, st				3	Hours	
Hr 10: Pr	reposition of p	lace, identity card,	verbs, indefinite artinegative sentence ephatitic pronouns, s		line			
nit 03:	inigs around t	as, subjective and c	phanic pronouns, s	en muoduction of		3	Hours	
Hr 16: A	djective's gen	der, noun's gender	gation: aller and ver t, things in a room, s accommodation, wr	imple prepositions				
nit 04:	ily broat debert	onon, op war wood t		was a sear bearen		3	Hours	
1111 04.								
Hr 20: H Hr 22: In	terrogative ad	jectives, daily activ	vities, time and seas		erbs	*		
Hr 20: H Hr 22: In Hr 24: N	terrogative ad	jectives, daily activ			erbs	3	Hours	
Hr 20: H Hr 22: In Hr 24: N I <b>nit 05:</b>	terrogative ad ear future tens	jectives, daily actives, talk about prefe	vities, time and seas rences, write a mail	ons, pronominal vo	erbs	3	Hours	<b>S</b>
Hr 20: H Hr 22: In Hr 24: N Init 05: Hr 26: O Hr 28: A	terrogative ad ear future tens uting activitie dverbs of freq	jectives, daily active, talk about prefers, conjugation: fair juency, family men	vities, time and seas	ons, pronominal vo			Hours	5
Hr 20: H Hr 22: In Hr 24: N nit 05: Hr 26: O Hr 28: A Hr 30: F	terrogative ad ear future tens uting activitie dverbs of freq	jectives, daily active, talk about prefers, conjugation: fair juency, family men	vities, time and seas rences, write a mail re and sortir, demon nbers, past tenses (p	ons, pronominal vo	imparfait			
Hr 20: H Hr 22: In Hr 24: N Init 05: Hr 26: O Hr 28: A Hr 30: Fr	ear future tense tuting activitie dverbs of frequench arts, talk bry: 15 Hrs	se, talk about prefers, conjugation: fair uency, family ment about a film, and	rences, write a mail re and sortir, demon- nbers, past tenses (p write a postal card	ons, pronominal ve strative adjectives assé composé and	imparfait	)		
Hr 20: H Hr 22: In Hr 24: N Init 05: Hr 26: O Hr 28: A Hr 30: Fr Thee	terrogative ad ear future tens ruting activitie dverbs of freq rench arts, talk ory: 15 Hrs	se, talk about prefers, conjugation: fair quency, family ment about a film, and	rences, write a mail re and sortir, demon- nbers, past tenses (p write a postal card	strative adjectives assé composé and	imparfait) Tota	)		
Hr 20: H Hr 22: In Hr 24: N Init 05: Hr 26: O Hr 28: A Hr 30: Fr Thee	terrogative adear future tense tuting activitie dverbs of frequench arts, talk ory: 15 Hrs  OOKS  he course facu	se, talk about prefers, conjugation: fair quency, family ment about a film, and Tutorial:	rences, write a mail re and sortir, demon	strative adjectives assé composé and  Project: s, handouts and no	imparfait) Tota	)		

1122	U23OL1102 German						P	J	С
0230	JL1102		<i>:</i>		1	0	0	0	1
Course C	utcomes								
At the en	d of the cou	se, the student wil	l be able to						
CO1:	Use comme	on, everyday expres	ssions to greet others	s and introduc	ce them:	selves.			
CO2:	Construct s	imple sentences /qu	estions.				· · · · · · · · · · · · · · · · · · ·		
CO3:	Initiate and	sustain basic conv	ersation based on fa	mily, professi	ions,				*
CO4:	Hobbies an	d food.							
CO5:	Identify dif	ferences in using n	ouns based on gende	er.					
	1	C	ourse Assessment r	nethods					
		Direc					Indire	et	
CIE test I 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	 3
• G	reeting and ta	aking leave, introdu	cing oneself, introd	ucing others					
Unit 02:		A STATE OF THE STA	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:							3	Hours	3
• H	obbies, Profe	essions							
Theo	ry: 15 Hrs	Tutorial:	Practical:	Project:-	-	Tota	1 Hours	: 15 H	rs .
TEXT BO									
1. N	etzwerk A1		6						

HOD

Dr. M.RENUGA, Professor & Head,

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

					L	T	P	I	C
U230	OL1103	Japanes	se		1	0	0	0	1
Course C	Outcomes		·						
		se, the student wi	ll be able to						
CO1:			eting in Japanese, wr			lphabet	t, identi	fy nam	es of
			tion using short and s						
CO2:			elated words and ver	b conjunctions	and n	nake lig	tht conv	ersatio	n
COL		lirections and answ	vering questions arough the day and the	osa usad for a	vina t	hings o	and don	nonetro	to
CO3:	the use of a		nough the day and th	iose used for g	vilig t	ımıgs, a	and den	10115114	ie
CO4:		-	anese language, des	scribe the loc	ations	of di	fferent	things	an
CO 1.		e counting in Japar	0 0						
CO5:	Make comp	parisons of stated th	nings, express a willi	ngness to go to	Japar	and us	se 'Te-f	orm' v	erbs
		C	Course Assessment n	nethods					
		Direc	t				Indire	ct	
CIE test I	(30)		Total CIE: 100 mark	ks			1000 707 100 700 700		
CIE test I			Semester End Exan	nination: NIL		Cour	rse end	survey	
CIE test I	II (40)	**************************************							
								Hours	
Hr 1-2: G			Japanese alphabet: 10	04 Hiragana an	d 104	Kataka			<b>.</b>
Hr 1-2: G Hr 3-4: Io Hr 5-6: S		rds from pictures of		04 Hiragana an	d 104	Kataka	na lette	rs	
Hr 1-2: G Hr 3-4: Io Hr 5-6: S J <b>nit 02:</b>	dentifying wo elf-introducti	rds from pictures con	or objects shown	04 Hiragana an	d 104	Kataka	na lette		
Hr 1-2: G Hr 3-4: Id Hr 5-6: S J <b>nit 02:</b> Hr 7-8: A	dentifying wo lelf-introducti	rds from pictures con	or objects shown	04 Hiragana an	d 104	Kataka	na lette	rs	
Hr 1-2: G Hr 3-4: Id Hr 5-6: S Jnit 02: Hr 7-8: A Hr 9-10:	dentifying wo elf-introducti asking for dire Time words a	rds from pictures con ections when shopped verb Conjugation	or objects shown	04 Hiragana an	d 104	Kataka	na lette	rs	
Hr 3-4: Io Hr 5-6: S Jnit 02: Hr 7-8: A Hr 9-10:	dentifying wo elf-introducti asking for dire Time words a	rds from pictures con	or objects shown	04 Hiragana an	d 104	Kataka	na lette	rs	3
Hr 1-2: G Hr 3-4: Id Hr 5-6: S Jnit 02: Hr 7-8: A Hr 9-10: Hr 11-12 Jnit 03:	dentifying wo self-introducti asking for dire Time words a : Making ligh	rds from pictures con ections when shopped verb Conjugation	ping ions	04 Hiragana an	d 104	Kataka	na lette	rs B Hours	3
Hr 1-2: G Hr 3-4: Id Hr 5-6: S Jnit 02: Hr 7-8: A Hr 9-10: Hr 11-12 Jnit 03: Hr 13-14 Hr 15-16	dentifying wo elf-introduction asking for direction asking for direction words at Making light Expressions: Verbs used	rds from pictures of on ections when shopp nd Verb Conjugate t conversation	ping ions	04 Hiragana an	d 104	Kataka	na lette	rs B Hours	3
Hr 1-2: G Hr 3-4: Id Hr 5-6: S Jnit 02: Hr 7-8: A Hr 9-10: Hr 11-12 Jnit 03: Hr 13-14 Hr 15-16 Hr 17-18	dentifying wo lelf-introducti Asking for dire Time words a : Making ligh : Expressions	ections when shopped to use verbs from	ping ions	04 Hiragana an	d 104	Kataka	na lette	Hours	3
Hr 1-2: G Hr 3-4: Id Hr 5-6: S Jnit 02: Hr 7-8: A Hr 9-10: Hr 11-12 Jnit 03: Hr 13-14 Hr 15-16 Hr 17-18 Jnit 04:	Asking for directions asking light asking light Expressions: Verbs used: Adjectives	ections when shopped to use verbs from for giving things	ping ions morning to night	04 Hiragana an	d 104	Kataka	na lette	rs B Hours	3
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Dr. M.RENUGA,
Professor & Head, Department of Humanities & Lan

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Talkin	g about hope	for the future						
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REFEREN	NCES							
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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: B. Tech Artificial Intelligence and Data Science

S.No	Course Code	Course Title		Т	P	J	С	Category	Total Contact Hours	Course Type*
		Theory of	cour	ses	-					
1.	U23ENG201A	Technical English	2	0	0	0	2	HS	30	T
2.	U23MAT202A	Discrete Mathematical Structures	3	1	0	0	4	BS	60	TT
3.	U23CHE204A	Chemistry for Information Science	2	0	2	0	3	BS	60	TL
4.	U23CPR205	Programming in C	3	0	0	0	3	ES	45	Т
5.	U23IT201	Microprocessor and Microcontroller	2	0	0	0	2	ES	30	Т.
6.	U23EGR207	Engineering Graphics	3	0	0	0	3	ES	45	T
7.	U23TAM201	தமிழரும் தொழில்நுட்பமும்/ Tamils and Technology	1	0	0	0	1	HS	15	Т
8.	U23GE201	Basic Aptitude- II	2	0	0	0	0	AC	30	T
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9.	U23CPL212	C Programming Laboratory	0	0	2	0	1	ES	30	L
10.	U23IT202	Microprocessor and Microcontroller Laboratory	0	0	2	0	1	ES	30	L
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		Optional Langu	age (	Cou	rses*	*	3.6			
11.	U23OL1201	French -II							15	T
12.	U23OL1202	German -II	,					OL	15	T
13.	U23OL1203	Japanese -II	1	0	0	0	1	OL	15	T
14.	U23OL1204						и	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

#### Approved By

d'faj.	J. dulgro >	Aurakumar 8.2.24	J. dulam >	2:8
Chairperson, Science and Humanities BoS	Chairperson, IT BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr.M.Renuga	Dr.J.Akilandeswari	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil Kumar

Copy to:-

12.01.2024

HOD/IT, Second Semester B. Tech ADS Students, Staff and COE

PRINCIPAL
SONA COLLEGE OF TECHNOLOGY
SALEM-636 005

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

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nit 01	:						•		•	<u>-</u>		Τ΄.	6 Hours	 S

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,
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SEME	STER -	п	DISC	CRETI	E MA'	THE	MATI	CALS	TRIM	TIID	FC	L	Т	P	J	C
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	using	the n	ules of	logic.									0141	11110	50	1100
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CO4:	analyz	ze and	d simpl	ify the	digita	l (logi	c) circ	uits us	ing the	conce	pt of	relati	ons.		1	
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							<b>74</b> 3 [1	ncory	WILLI EU	ionar		<b>.</b>	ndir	oot		
Direct Indirect  CIE test I (8) (Theory) Attendance (5)  CIE test II (8) (Theory) Assignment/Quiz/Seminar (5)  CIE test III (8) (Theory) Total CIE: 40 marks  Objectives Test (6) Course end survey  Course end survey																
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#### Jnit 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. Jnit 03 COMBINATORICS Counting principle - Sum and product rule - Principle of inclusion and exclusion - Pigeonhole principle - Permutations and combinations - Mathematical induction - Recurrence relation -Solution of recurrence relation using generating functions. RELATIONS Unit 04 12 Hours Relations - domain and range of a relation - Types of relations (reflexive, symmetric, transitive, antisymmetric and irreflexive relations) 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 05 **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. Theory: 45 Hrs Tutorial: - 15 Practical: -Project:--Total Hours: 60 Hrs **TEXT BOOKS:** 1. K. H. Rosen, "Discrete Mathematics and its Applications", McGraw Hill Publishers, 8th 2. J. P. Trembly and R. Manohar, "Discrete Mathematical Structures with Applications to Computer Science", McGraw Hill Publishers, 1st Edition, 2017. **REFERENCE BOOKS:** T. Veerarajan, "Discrete Mathematics with Graph Theory and Combinatorics", McGraw Hill Publishers, 19<sup>th</sup> Reprint, 2014. R. P. Grimaldi, "Discrete and Combinatorial Mathematics: An Applied Introduction", Pearson Publishers, 5<sup>th</sup> Edition, 2006. https://nptel.ac.in/courses/106/106/106106094/ ASSOCIATE PROFESSOR & HEAD DEPARTMENT OF MATHEMATICS, SONA COLLEGE OF TECHNOLOGY, SALEM-636 005. Tamilradu. Ph: 0427-4099099. BoS Date: 08, 07, 2023 **HoD/Mathematics**

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CO5:	: 2	Analyze th	e need	of e-wa	ste ma	nageme	nt and	disposa	l metho	ods acro	ss the g	globe.		
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#### 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: CHEMISTRY OF POLYMERS AND ORGANIC ELECTRONIC MATERIALS

6 Hours

Introduction to polymers – types of polymerization reactions - conducting polymers, types - Organic semiconducting materials – working principle and examples - advantages over inorganic semiconducting materials - Organic dielectric material-definition and examples – Organic Light Emitting Diodes (OLEDs) - construction-working principle and applications – Organic transistors- construction-working principle and applications.

### Unit 04: ELECTROCHEMICAL PROCESSING IN ELECTRONIC INDUSTRIES

6 Hours

Electroplating-Principle and process-Plating parameters-Current and energy efficiency-Electroplating of Cu - Fundamentals of electroless deposition - Electroless plating of Cu - Fabrication of PCB's - Electrochemical etching of copper from PCB's - Anodizing-Definition-Principle and working methodology of aluminium anodizing and its applications – Sensors – Definition and types.

#### **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.

#### **List of Experiments**

30 Hours

- 1) Estimation of HCl by pH metry
- 2) Estimation of HCl by conductometry (HCl Vs NaOH).
- 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.
- 8) Estimation of alkalinity of water sample by indicator method.

Theory: 30 Hrs	Tutorial: 0	Tutorial: 0 Practical: 30 Hrs Project: 0		Total Hours: 60 Hrs
TEXT BOOKS				
1. P.C.Jain and Mor	nica Jain, "Engine	eering Chemistry" [	hanpat Rai Pub, C	Co., New Delhi , 17th Edition,
2018.				
2. Wiley Editorial	Board, "Wiley I	Engineering Chemis	stry", 2nd Edition	, Wiley India Pvt.Ltd, New
Delhi, Reprint 20	19.			
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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.

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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.

U23CPR205				PROGRAMMING IN C						L		T	P	J	C		
			(00	(Common to CSE, CSE(AIML), CSD, ADS, IT and ECE Branches)						3		0	0	0	3		
Cou	rse O	utcomes							-								
At th	ie end	of the co	urse, th	e stude	ent wil	l be able	e to										
CO	1:	Write simple C programs using console input and output functions															
CO2: Write C programs using arr											nts				-		
CO	3:	Design an															
CO		Design an															
CO		Design an															
Pre-r	equis													7			
			(3	3/2/1 indi	cates th	e strength	of correl	O Mapp lation) 3-	Strong, 2	-Medium	, 1-Weal	<					
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COI	1	2	3	2	2	2	PO7	PO8	P09	PO10 2	PO11 2	PO12	PSO1	PSO2	PSO3		
CO2	2	2	3	2	2	1		2		2	2	3	3	2	2		
CO3	2	3	3	2	2	1		2		2	2	3	3	2	2		
CO4	2	3	3	2	2	1	- 1	2	- 5	2	1	3	3	2	2		
CO5	2	3	3	2	2	2	-	2	-	2	2	3	3	2	2		
						Course	Assessr	nent m	ethods						_		
				D	irect		AL.					In	direct				
	CIE test I (8) CIE test II (8) CIE test III (8) Assignment/seminar/Quiz (5)						Objectives Test (6) Attendance (5) Total CIE: 40 marks Semester End Examination (60)					Course end survey					
CIE te CIE te Assign	st II (8 st III (	(8)			S				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

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SONA COLLEGE OF TECHNOLOGY
SALEM-636 005

At the end of the course, the student will be able to  CO1: Analyze the architecture, instruction set, and assembly language programs of 8085 processors.  CO2: Understand the internal organization of the 8086 processors.  CO3: Demonstrate the interfacing devices with the processors.  CO4: Analyse the multiprocessor configurations and advanced processors.  CO5: Describe the architecture of 8051 microcontroller.  CO5: Describe the architecture of 8051 microcontroller.  CO6: Programme Outcomes (POs) and Programme Specific Outcome (PSOs)  PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PSO1 PSO1 PSO1 PSO1 PSO1 PSO1 PSO1 PSO1	U	23IT2	201	MIC							OLLER			P	J C
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CO/PO, PSO Mapping	CO5:			ne archit	ecture of	f 8051 m	icrocon	troller.	141						
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femory interfacing with Microprocessors - Parallel Communication Interface (8255) - Serial															urs
	/lemor	y in	nterfacing	with	Micro	processo	ors –	Parall	el Cor	nmuni	cation	Interface	(825	5) –	Serial

## UNIT IV: MULTIPROCESSOR AND ADVANCED MICROPROCESSORS

6 Hours

Coprocessor Configuration – Closely Coupled Configuration – Loosely Coupled Configuration – Numeric Data Processor (8087) – Architecture of 8087 – Microarchitecture of I3 Processor - Microarchitecture of I5 Processor.

## **UNIT V: MICROCONTROLLER**

6 Hours

8051 Microcontroller- Architecture – signals descriptions of 8051– Register set of 8051- Addressing modes - memory addressing by 8051 – I/O addressing by 8051.

T	heory: 30 Hrs	Tutorial:	Practical:	Project:	Total Hours: 30 Hrs
TEX	T BOOKS	L			
1.	Ramesh S. Gaonle	car," Microproces	sor – Architecture	e, Programming an	d Applications with the 8085"
	Penram Internation	onal Publisher, 6 <sup>th</sup>	Edition, 2013.(Un	nit-1)	
2.	A.K.Ray & K.	M Bhurchandi,	"Advanced Mic	roprocessor and	Peripherals - Architecture,
	1			Graw Hill, 2017.(U	
REF	ERENCES				
. 1.	Douglas V.Hall an	nd SSSP Rao, " M	licroprocessors an	d Interfacing", thir	d edition, Tata Mc Graw Hill
	,2012.				
. 2.	Yn-cheng Liu,Gle	enn A.Gibson, "N	Microcomputer sy	stems: The 8086	/ 8088 Family architecture,
	Programming and				
. 3.	Mohamed Ali Maz	zidi,Janice Gillispi	ie Mazidi," The 80	051 microcontrolle	r and embedded systems using
	Assembly and C",				
4.	Kenneth J.Ayala,	"The 8051 micro	ocontroller and E	Embedded systems	using assembly and C", 1st
	edition, Cengage le				,
5.	A.Nagoor Kani, "N	Microprocessors an	nd Microcontrolle	rs", 2 <sup>nd</sup> edition,TM	H,2015.

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CO3:		Draw the	projecti	on of si	mple	solids by	rotatin	g object	t metho	d.		er binz	alti.m	mier.
CO4:		Develop	the section	on of sir	mple	solids and	d latera	l surfac	e of tru	ncated s	solids.	101	STATE OF	
CO5:		Draw the	isometr	ic view	to ort	hographi	ic proje	ction.	April 1					
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he abo	ve cı	irves.	1 3 6 3 1 2 3 6 3 1											

Unit 02: PROJECTION	OF POINTS, LIN	ES AND PLANE	SURFACES. (CAD		
Software)		CARTAGO DEL		in this are	
Orthographic projection points. Projection of st			~		9 Hours
principal planes -Deter			and the state of t		9 Hours
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principal plane by rotati			ices) inclined to o	ne or the	
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Unit 03: PROJECTION					
Projection of simple so		The state of the s		and market and the	9 Hours
when the axis is incline	ed to one of the p	principal planes a	nd parallel to the	other by	
rotating object method.		their francishment	alas algentias		Will alvin
Unit 04: PROJECTIO	N OF SECTION	NED SOLIDS A	ND DEVELOPM	ENT OF	
SURFACES. (CAD Soft	ware)				
Section of solids in simp					9 Hours
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s not required). Develop		urfaces of truncated	l solids — Prisms,	utings 1	
pyramids cylinders and	cones.		Carle State of the		
Unit 05: ISOMETRIC	TO ORTHOGRA	APHICS PROIEC	TION- (Manual o	trafting).	
Representation of three					
of multiple views - Firs	st angle projection	- layout of views	- Conversion of	isometric	
view to orthographic vie	ews.				9 Hours
					9 Hours
Practicing three dimens	ional modelling of	f simple objects us	ing CAD Software	(Not for	
examination)					
	ALL I SAVE	- b 1 - 1 - 1 - 1		7	
Theory: 45 Hrs	Tutorial: -	Practical:	Project:	Total H	ours: 45 Hrs
			- Ville		
FEXT BOOKS					
1. Bhatt N.D. and 1 2019.	Panchal V.M., "E	ngineering Drawii	ng", Charotar Pub	lishing Hous	e, 53rd Editio
2. Natrajan K.V., "A	Text Book of En	gineering Graphics	s", Dhanalakshmi I	Publishers, C	hennai, 2018.
3. Parthasarathy, N.	S. and Vela Mura	li "Engineering D	rawing" Ovford II	niversity Dre	2015
J. A. SHERMANNE STEELY 9 X 10	D. WILL T VILL ITTUIL	n, Luguecing D	awing, Oxioid O	miversity Fie	SS, 2015

Dr.D. SENTHIL KUMAR, ME,PhD PROFESSOR & HEAD DEPT. OF MECHANICAL ENGG.

DEPT. OF MECHANICAL ENGG. SONA COLLEGE OF TECHNOLOGY JUNCTION MAIN ROAD, SALEM-5.

Salem, Revised edition, 2012.

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CO1:	Describe the	e weaving and cer	amic technology			8.		
CO2:	Explain the d	design and construct	ion technology					
CO3:	Analyse the n	manufacturing techn	ology		-			
CO4:	Describe the	agriculture and irrig	gation technology				-	
CO5:	Explain the S	Scientific Tamil and	Tamil Computing	7				
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பரலாற்றுச டருவாக்கு	டும் கலை – சான்றுகளாக ம் தொழிற்சான	க செம்பு மற்றும் லைகள் – கல்மணிச	இரும்புத் தொழிற்சாலை – இ தங்க நாணயங்கள் – நாண கள், கண்ணாடி மணிகள் – சுடும கள் – சிலப்பதிகாரத்தில் மணிக	സ്ഥയ്ക്കണ് മൽ ഥൽി	அச்சடித்த கள் – சா	ல், எ <i>்</i> ல்	3 %கு – மணி	
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ிமன்பொடு	தமிழின் வள நட்கள் உருவா	் தமிழ் மற்றும் கண ர்ச்சி –கணித்தமிழ் rக்கம் – தமிழ் இன ற்குவைத் திட்டம்.	ரித்தமிழ்: வளர்ச்சி — தமிழ் நூல்கணை ணையக் கல்விக்கழகம் – தமிழ்	ா மின்பதி மின் நூல	ப்பு செய் சும் – இ	கல்	3 <i>கூ</i> ழிம்	

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

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

U23'	ГАМ201	a *	TAMILS	AND TECHNOLO	GY	L	T	P	J	C
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Course C	Outcomes								-	
At the er	nd of the cou	rse, the stu	dent wil	l be able to						
CO1:	Describe th	ne weaving	and cera	mic technology						
CO2:	Explain the	design and	construction	on technology				***************************************		
CO3:	Analyse the	manufactur	ing techno	logy	<del>98-81-81-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-</del>			************	***************************************	
CO4:	Describe the	e agriculture	and irriga	ation technology					No.	3 7
CO5:	Explain the	Scientific T	amil and	Tamil Computing						7
			Co	ourse Assessment n	nethods		1.			
			Direct					Indire	et	-
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CIE test I CIE test I	` ,			Semester End Exan	nination: N	IL	Cour	se end	survey	
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	ndustry during on Potteries	g Sangam A	.ge – Cera	mic technology – Bla	ck and Red	Ware Pott	eries (BR	W)		
J <b>nit 02:</b> D	ESIGN AND	CONSTRUC	CTION TE	ECHNOLOGY		-		3	Hours	
	ning and Stru	uctural cons	struction I	House & Designs in	household	materials	during S	Sangam	Age -	
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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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CO3:	Volum Comp correc	ne. rehend tly.	the give	n passaş	ges for R	eading C	Comprehe	ension ac	ctivity a	nce, Surfa	r the q	uestio	Ho
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	PO1	Pro PO2	ogramm PO3	PO4	PO5	PO6	rogramm PO7	PO8	P09	PO10	PO 11	a A. Seti	12
CO1	PO1	Property PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO 11 2	3	12
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CO1 CO2 CO3	PO1 3 3 3 3	Pro PO2 3 3 3 3	PO3 3 3 3	PO4 2 2 2	PO5  1  1	PO6 PO6 1 1	PO7  1  1	PO8 3 3 3	P09 3 3 3	PO10 3 3 3	PO 11 2 2 2 2	3 3 3	12
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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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Dr. S. ANITA

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Company Limited 2019.

2.

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

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ı	23CP	L212	(Cor	nmon to	ADS, I	Γ, CSE, ( Branch		L), CSD	and ECE	0	(		2	0	1
Cour	se Ou	tcomes													
At the	e end	of the cou	rse, th	e stude	nt will	be able	to		, , ,						
(	CO1 [	Design and	devel	op simp	le prog	rams us	sing bra	nching	looping	g staten	nents		x I		
CO	_	Develop pi													
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			(3	3/2/1 indi	cates the				Strong, 2	-Medium	. 1-Weak				
COs									nme Spe						
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CO1	1	2	3	2	2	2	-	-	-	-	-	-	1	2	2
CO2	2	2	3	2	2	1		-	-	-	- 1	-	1	2	2
CO3	2	3	3	2	2	1	-	-	-		-	-	1	2	2
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CIE te	,	15)			- 1	otal CIE	,	arks							
Quiz I	1- (5)								ion (40	marks)					
List of	Expe	riments:						20	1011 (10	marko)					
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		rams using					it states	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

Dr. B. SATHIYABHAMA, B.E., MToch., Ph.O.

PROFESSOR & HEAD,

Dept. of Computer Science and Engineering SONA COLLEGE OF TECHNOLOGY

SALEM-636 005

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Course	e Outcom es	,							1	
At the	end of the cours	e, the student will be able to	<u> </u>							
CO1:	Write ALP pro	grams for arithmetic manipul	lations using 1	Microproc	essors.					
CO2:	Interface diff Microcontrolle	erent I/Os with micropro r.	cessors and	perform	arithmetic	ma	nipul	ation	s us	sing
CO3:	Solve real time	industry-based problems with	th Microproce	essors and	Microcontro	ollers		4.00	The state of the s	
Pre-re	quisite:									
	(	CO / PC /2/1 indicates strength of cor	), PSO Mappi relation) 3-St		edium, 1-W	eak				
Cos		Programme Outcomes (POs	) and Program	ıme Speci	fic Outcome	(PS	Os)			

Course Assessment methods								
Direct		Indirect						
CIE Test I – 15M	Record – 10M							
Quiz 1 – 5M	Total CIE $-60$ M,							
CIE Test II – 15M	Semester End Examination – 40 M	Course end survey						
Quiz 2 - 5M		ourse tha saire,						
RTPS = 10M								

PO7 PO8

P09

PO10

PO11

**PO12** 

2

## LIST OF EXPERIMENTS

Cos

CO<sub>1</sub>

CO<sub>2</sub>

PO<sub>1</sub>

2

PO<sub>2</sub>

3

PO<sub>3</sub>

3

3

PO4

2

2

PO5

PO6

30 Hours

PSO<sub>2</sub>

1

- 1. 8-bit and 16 bit Manipulations- Addition, Subtraction, Multiplication and Division using Microprocessors.
- 2. Code conversions BCD to Binary and Binary to BCD using Microprocessors.
- 3. Decimal Arithmetic and Bit Manipulation using Microprocessors.
- 4. Double precision Addition and subtraction using Microprocessors.
- 8255 Interface -Experiments with mode 0 and mode1 using Microprocessors.
- 6. 8279 Interface -Keyboard/ Display Interface with Microprocessors.
- 8253 Interface -Timer Interface with Microprocessors.
- 8. 8251 Interface -Programmable Communication Interface with Microprocessors.
- 9. 8-bit and 16-bit Manipulations- Addition, Subtraction and Multiplication using 8051.
- 10. Array Operations-Sum of N Elements using 8051.
- 11. Applications Traffic light controller and stepper motor using Microprocessors and Microcontroller.

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

I2-0I-2024

Version I.O

B. Tech-IT & B Tech-ADS

Semester II

B.E/B. Tech Regulations 2023



PROFESSOR & HEAD Department of Information Technology SONA COLLEGE OF TECHNOLOGY

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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 boa	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, thout weather, draft a mail response							, talk
CO5:	Express on	e's interest and	wish, describe a p	et animal, expr	ess of	ne's av	ersions	encoi	irage
	others, write	e to ask for a help.	narrate a past even	t, write a biograp	ohy		•1010110,	011000	nugo
			Course Assessment						
		Direc	t				Indirec	f	
CIE test I	(30)		Total CIE: 100 ma	rks					
CIE test II	` '		Semester End Exa	mination: NIL	1	Course end survey			
CIE test II	II (40)								
Unit 01:			8		•		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	Cominantian	1. 1'	-,			3 ]	Hours	
Hr 10: Tra	nsport leisur	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 compans	OH				
Unit 03:			,				3 1	Hours	
Hr 14: Thi	ings in a store	, conjugation : fai	re, imparfait 2, pass	é composé	-4			iouis	
Hr 16: Thi	ings in a repa	iring shop, compu	ter, relative pronour	ns: que and qui					
Hr 18: Imp	perative negative	ive, express oblig	ation and interdiction	on, online sale ar	nd resp	onse			
Jnit 04:							3 I	Hours	
Hr 20: Pro	fessions, con	ugation: 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	cavoir denuis ve	nande	nnt	31	Iours	
Hr 28: Imp	parfait vs pass	é composé, nature	e and environment,	indirect pronoun	s COI	anı			
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 a	notes.				
2. Boo	oks : Saison (1	Méthode de frança	is, cachier d'activit	és)					
3. Ref	erence books	: La conjugaison,	Dondon, Echo	8					

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U23	OL1202	* "	German - II		L	T	P	J	C
					1	0	0	0	1
Course (	Outcomes				2	-		1	
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 convers	sation.	2			
CO2:	Make them	frame simple sente	ences /questions.		-				
CO3:	Accentuate	to start and sustain	basic conversation	1	-				
CO4:	Helps them	articulate thoughts	in German				-		
CO5:	Identify the	different forms of	the verb						
		C	ourse Assessment	methods					
		Direct					Indirec	f	
CIE test I			Total CIE: 100 ma	rks					
CIE test I	` '		Semester End Exa	mination: NIL		Cours	se end s	urvey	
Unit 01:	11 (10)						2.1	Hours	
Nominati	ve/accusative	case, adjectives					<u> </u>	ilouis	
Unit 02:							31	Hours	<del></del>
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.
Jnit 04:							3 I	Hours	
• Sin	mple sentence	s using modal / sep	parable verbs				10	-	
Jnit 05:							3 H	lours	
• Ar	ticles of cloth	ing							
Theor	ry: 15 Hrs	Tutorial:	Practical:	Project:		Total 1	Hours:	15 Hrs	
TEXT BO	OKS						Α		
1. Net	tzwerk A1	100		2 1	,				

HOD 13 July.

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SALEM - 636

CO1: Use CO2: Der des CO3: Use CO4: Exp recc CO5: Rea and  CIE test I (30) CIE test III (40) Unit 01: Hr 1-2: Words Hr 3-4: Asking Hr 5-6: Describ Unit 02: Hr 7-8: Verbs Hr 9-10: Verbs Hr 9-10: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual Unit 04:	the course e verbs in monstrate scribe expe plain-streeved and 126 led III to pas of the press sent being for permise bing two set that expense which e	the application of the eriences  Ale expressions, the tences that use 'vectors of Kanji, and is the Japanese Landard Comparison of the Landard Comparison of the Japanese Landard Comparison of the Landard Comparison of the Japanese Landard Comparison of the Landard Comparison of th	on or for dissuasion of causative verbs and fose that state opinion when and 'if' and demonstrate adequage Proficiency ourse Assessment of the Total CIE: 100 mar Semester End Examples of Kanji 1-10 atements to prohibit 21-30	ons, and verbs and those that describuate knowledge of Test (JLPT) for the methods	d adjective be how so of the less he N5 Less Co	t activities or possible tes that go ervices ar sons learnt vel Indirect ourse end s	with note given	ouns n and vels I
At the end of CO1: Use des CO2: Der des CO3: Use CO4: Express and CIE test II (30) CIE test III (40) C	e verbs in monstrate scribe expe plain-streeved ad 126 led II to pas of the press sentieved are pressent to the press sentieved and the pressent even and verb groups for permise that expenses which everbs which everbs in the pressent even and verb groups and verb groups which ever the pressent even and verb groups which even	polite conversation of the application of eriences yle expressions, the ences that use 'verters of Kanji, and is the Japanese Land Comparison of the Japanese	on or for dissuasion of causative verbs and fose that state opinion when and 'if' and demonstrate adequage Proficiency ourse Assessment of the Total CIE: 100 mar Semester End Examples of Kanji 1-10 atements to prohibit 21-30	ons, and verbs and those that describuate knowledge of Test (JLPT) for the methods	d adjective be how so of the less he N5 Less Co	res that go ervices ar sons learning vel  Indirection ourse end sourse end source end so	with no e giver in Lev	nd ouns n and vels
CO1: Use CO2: Der des CO3: Use CO4: Exp recc CO5: Rea and  CIE test I (30) CIE test II (30) CIE test III (40) Unit 01: Hr 1-2: Words Hr 3-4: Asking Hr 5-6: Describ Unit 02: Hr 7-8: Verbs Hr 9-10: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual Unit 04:	e verbs in monstrate scribe expe plain-st press senteived ad 126 led II to pas of the press of t	polite conversation of the application of eriences yle expressions, the ences that use 'verters of Kanji, and is the Japanese Land Comparison of the Japanese	on or for dissuasion of causative verbs and fose that state opinion when and 'if' and demonstrate adequage Proficiency ourse Assessment of the Total CIE: 100 mar Semester End Examples of Kanji 1-10 atements to prohibit 21-30	ons, and verbs and those that describuate knowledge of Test (JLPT) for the methods	d adjective be how so of the less he N5 Less Co	res that go ervices ar sons learning vel  Indirection ourse end sourse end source end so	with note given	ouns n and vels
CO1: Use CO2: Der des CO3: Use CO4: Exp recc CO5: Rea and  CIE test I (30) CIE test II (30) CIE test III (40) Unit 01: Hr 1-2: Words Hr 3-4: Asking Hr 5-6: Describ Unit 02: Hr 7-8: Verbs Hr 9-10: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual Unit 04:	e verbs in monstrate scribe expe plain-st press senteived ad 126 led II to pas of the press of t	polite conversation of the application of eriences yle expressions, the ences that use 'verters of Kanji, and is the Japanese Land Comparison of the Japanese	on or for dissuasion of causative verbs and fose that state opinion when and 'if' and demonstrate adequage Proficiency ourse Assessment of the Total CIE: 100 mar Semester End Examples of Kanji 1-10 atements to prohibit 21-30	ons, and verbs and those that describuate knowledge of Test (JLPT) for the methods	d adjective be how so of the less he N5 Less Co	res that go ervices ar sons learning vel  Indirection ourse end sourse end source end so	with note given	ouns n and vels
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CIE test II (30) CIE test III (40) Unit 01: Hr 1-2: Words Hr 3-4: Asking Hr 5-6: Describ Unit 02: Hr 7-8: Verbs Hr 9-10: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual Unit 04:	and verb g for perm bing two	s expressing requesission; making state activities / Kanji 2 ress 'I have to'	Total CIE: 100 man Semester End Examplests / Kanji 1-10 attements to prohibit 21-30 / Kanji 31-40	mination: NIL		ourse end s	Survey <b>Hours</b>	
CIE test II (30) CIE test III (40) Unit 01: Hr 1-2: Words Hr 3-4: Asking Hr 5-6: Describ Unit 02: Hr 7-8: Verbs Hr 9-10: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual Unit 04:	and verb g for perm bing two	ission; making state activities / Kanji 2 ress 'I have to' appress ability or p	Semester End Exameters / Kanji 1-10 atements to prohibit 21-30 / Kanji 31-40	mination: NIL		ourse end s	Survey <b>Hours</b>	
CIE test II (30) CIE test III (40) Unit 01: Hr 1-2: Words Hr 3-4: Asking Hr 5-6: Describ Unit 02: Hr 7-8: Verbs Hr 9-10: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual Unit 04:	and verb g for perm bing two	ission; making state activities / Kanji 2 ress 'I have to' appress ability or p	Semester End Exameters / Kanji 1-10 atements to prohibit 21-30 / Kanji 31-40	mination: NIL		3	Hours	
Unit 01:  Hr 1-2: Words Hr 3-4: Asking Hr 5-6: Describ Unit 02:  Hr 7-8: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03:  Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual Unit 04:	and verb g for perm bing two s that express which e	ission; making state activities / Kanji 2 ress 'I have to' appress ability or p	atements to prohibit 21-30 / Kanji 31-40	something / Kan	ji 11-20	, j.,		
Hr 3-4: Asking Hr 5-6: Describ Unit 02: Hr 7-8: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual Unit 04:	s that express which e	ission; making state activities / Kanji 2 ress 'I have to' appress ability or p	atements to prohibit 21-30 / Kanji 31-40	something / Kan	ji 11 <b>-2</b> 0	, j.,		
Hr 7-8: Verbs Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual	s which e	xpress ability or p	/ Kanji 31-40			3	Houre	
Hr 9-10: Verbs Hr 11-12: Desc Unit 03: Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual	s which e	xpress ability or p	/ Kanji 31-40				110415	
Hr 13-14: Plain Hr 15-16: Expr Hr 17-18: Qual J <b>nit 04:</b>		perience / Kanji 5	oossibility / Kanji 41 51-60	1-50				
Hr 15-16: Expr Hr 17-18: Qual J <b>nit 04:</b>			3 - 1			3	Hours	
Jnit 04:	ressions li	pressions / Kanji ( ke 'I think that uns with verbs an		81-90		* v ,	2 8	
II 10 00 E						3	Hours	
Hr 21-22: Desc	cribing the	sing 'When' / e giving and receiving 'If' / Kar	ving of services / K	anji 101 <b>-</b> 110				
Jnit 05:		, , , , , , , , , , , , , , , , , , ,	iji 111-120			3	Hours	
Hr 25-26: Prepa Hr 27-28: Prepa	aring for	ILPT N5						
Hr 29-30: Prepa		T	T		T			-
Theory: 15		Tutorial:	Practical:	Project:	Tot	al Hours:	15 Hrs	3
1. The cour		v will provide har	ndouts / notes / cour	se material				
		apanese language		se material.				

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0					1	0	0	0	1
	Outcomes								
		se, the student w	ill be able to						
CO1:	Identify tim								
CO2:		date and days of	the week						
CO3:		ation and places		and the second s					
CO4:	Explain des								
CO5:	Construct si	imple sentences /							
		(	Course Assessment	methods					
		Dire	ct				Indirec	t	
CIE test I			Total CIE: 100 ma	rks					
CIE test I	, ,		Semester End Exa	mination: NIL		Cours	se end s	urvev	
CIE test I	II (40)								
Unit 01: 7	ime			3			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				6		
Unit 03:	Location		u Nama				3	Hours	
Talking a		mething at a locat	ion			u s,			
Jnit 04:	Direction	*					3]	Hours	
Talking al	out direction	S					***************************************		
Jnit 05: F			•		<del></del>		31	Hours	
		nething in the fut	ure				-	,	
	oout plans for out hope for								
	y: 15 Hrs	Tutorial:	Practical:	Project:	T	T . 13	т	4F TT	
111001	y. 15 ms	i utoriai:	1 factical.	110,661	1	Total 1	dours:	15 Hrs	3
REFERENC		i utoriai:	1 factical.	110,666		1 otal 1	iours:	15 Hrs	

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