SONA COLLEGE OF TECHNOLOGY, SALEM-5

(An Autonomous Institution)

B.E- Electrical and Electronics Engineering

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: Electrical and Electronics Engineering

S.No	Course Code	Course Title	L	Т	P	J	C	Category	Total Contact Hours	Course Type*
		Theory Course	S							12" 1 1
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.	U23CHE104C	Chemistry For Electrical Engineering	3	0	0	0	3	BS	45	Т
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.	U23CHL111B	Chemistry Laboratory	0	0	2	0	1	BS	30	L
9.	U23PPL112	Python Programming Laboratory	0	0	2	0	1	ES	30	L
		Te	otal	Cre	dits		19			
		Optional Language Co	ours	es**						
10.	U23OL1101	French							15	T
11.	U23OL1102	German	1						Hours 60 75 45 45 45 30 30 30	T
12.	U23OL1103	Japanese		0	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)

App	rovec	I By

M-100/23	8. Paru	Mirelliner	J. dulano 7	
Chairperson, Science and Humanities BoS	Chairperson, EEE BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr,M,Renuga	Dr.S.Padma	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil Kumar

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HOD/ Electrical And Electronics Engineering, First Semester B.E. EEE Students and Staff, COE

04.08.2023 Version 1.0 Semester I B.E/B.Tech Regulations-2023

Sona College of Technology, Salem (An Autonomous Institution)

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

Branch: Electrical and Electronics Engineering

S.No	Course Code	Course Title	L	Т	P	J	C	Category	Total Contact Hours	Course Type*	
	17 15	Theory courses			1						
1.	U23ENG201A	Technical English	2	0	0	0	2	HS	30	T	
2.	U23MAT202B	Transforms and Differential Equations		1	0	0	4	BS	60	TT	
3.	U23PHY203D	Engineering Physics	3	0	0	0	3.	BS	45	T	
4.	U23EE201	Electrical Circuit Analysis	3	1	0	0	4	PC	60	TT	
5.	U23ME204	Thermodynamics and Fluid Machines		0	0	0	3	ES	45	Т	
6.	U23TAM201	தமிழரும் தொழில்நுட்பமும் / Tamils and Technology		0	0	0	1	HS	15	T	
7.	U23GE201	Basic Aptitude -II		0	0	0	0	AC	30	T	
-		Practical course	s								
8.	U23PHL210B	Engineering Physics Laboratory	0	0	2	0	1	BS	30	L	
9.	U23EE202	Electrical Circuits Laboratory	Electrical Circuits Laboratory		0	3	0	1.	PC	45	L
			T	otal	Cre	dits	19 .5			9 T	
		Optional 1	Lan	guag	ge Co	ourse	S**				
10.	U23OL1201	French - II							15	T	
11.	U23OL1202	German - II						/s	15	T	
12.	U23OL1203	Japanese - II	1	0	0	0	1	OL	15	T	
13.	U23OL1204	Korean - II					8.	2	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

Approved By

M. L. M.	S. Paku	Mirakemer	J. Alban	PB:M
Chairperson, Science and Humanities BoS	Chairperson, EEE BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr.M.Renuga	Dr.S.Padma	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil Kumar

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HOD/ Electrical and Electronics Engineering, Second Semester B.E. EEE, Students and Staff, COE PRINCIPAL

SONA COLLEGE OF TECHNOLOGY SALEM-636 005

12.01.2024 Version 1.0 Semester 2 B.E/B.Tech Regulations-2023

^{**}Students may opt for foreign languages viz., German/French/Japanese/Korean with additional one credit (Not accounted for CGPA calculation)

Sona College of Technology, Salem

(An Autonomous Institution)

Courses of Study for B.E/B.Tech. Semester I under Regulations 2023 (CBCS) Branch: Electrical and Electronics Engineering

S.No	Course Code	Course Title	L	Т	P	J	C	Category	Total Contact Hours	Course Type*
		Theory Course	S							12" 1 1
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.	U23CHE104C	Chemistry For Electrical Engineering	3	0	0	0	3	BS	45	Т
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.	U23CHL111B	Chemistry Laboratory	0	0	2	0	1	BS	30	L
9.	U23PPL112	Python Programming Laboratory	0	0	2	0	1	ES	30	L
		Te	otal	Cre	dits		19			
		Optional Language Co	ours	es**						
10.	U23OL1101	French							15	T
11.	U23OL1102	German	1						Hours 60 75 45 45 45 30 30 30	T
12.	U23OL1103	Japanese		0	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

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04.08.2023 Version 1.0 Semester I B.E/B.Tech Regulations-2023

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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 ₄	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			
Pre-re	quisi	te:												
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						CO/PO,								
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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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		10) (Practi /seminar/)	(SEE – TI narks)					Cot	irse end	d surve	y ,

- 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:

SEMI	ESTER	R-I						:1			L	T	P J	C
U23MA	T102	A	LINE	AR AL	GEBRA	AND	CALCU	LUS WI	TH MA	TLAB	3	0	2 0	4
Course	Outco	omes					THE STATE OF THE PARTY.					11	1	1
At the	end of	the cou	rse, the	student	will be	able to								
CO1:	find	the rank	k of the	matrix a	nd solve	linear s	ystem of	equatio	ns by di	rect and i	ndirect r	nethods	3	
CO2:	app	ly the co	ncepts o	f vector	spaces a	and linea	ır transfo	ormation	s in real	world ap	plication	ns		
CO3:	app		ncepts o	f eigenv	alues an	d eigenv	ectors o	of a real i	matrix a	nd their p	ropertie	s to dia	gonalize	the
CO4:	_		lor's ser	ies expa	nsion. Ja	acobians	and the	maxima	and mi	nima of f	unctions	of two	variable	S
CO5:	_									and volu				
Pre-rec	uisite	s:												
•	Funda	mentals	of eleme		gebra	1				ntals of ge		try	XXXXX STATE OF THE	
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COs	PO1	Programme Outcomes (POs) and Programme Specific Out PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10								mes (PS PO11	Os) PO12	PSO1	PSC	
CO1	3	2	103	3	2	100	107	100	107	1010	2	2	3	3
CO2	3	2		3	2						2	2	3	3
CO3	3	2		3	2						2	2	3	3
CO4	3	2		3	2						2	2	3	3
CO5	3	2		3	2						2	2	3	3
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			lution of		system o	of equati	ons by 1	matrix m	ethod,	Gauss elin	mination	, Gauss	-Jordan,	Gauss
Init 02	VEC	CTOR S	PACES										9 H	ours
	space	– linear	indepen	dence ar	nd deper	ndence o	of vector	s – basi	s – dim	ension –	linear tra	ansform	nations (maps)
Vector matrix	associa	ited With	i a illicai	map - 1	mige mi									

Unit 04	MULTIVARIABLE CALCULUS			9 Hours
two v	ions of several variables – partial differentiation ariables – maxima and minima of functions on the by Lagrange's method of undetermined multip	f two variables		
Unit 05	MULTIPLE INTEGRALS			9 Hours
	e integrals – change of order of integration – cle integrals in Cartesian coordinates – triple integrals			
	List of M	ATLAB Progr	ams	
1.	Programs based on elementary operations of	n matrices		teres of his was higher and in a sure after a sure and a
2.	Computing the rank of a matrix			
3.	Finding eigenvalues and eigenvectors of a r	natrix	CONTRACTOR OF THE STATE OF THE	
4.	Finding partial derivatives of functions of s	everal variables	3	
5.	Computing stationary points of functions of	f two variables	. è	
6.	Taylors series expansion of functions of tw	o variables		
7.	Evaluating double integrals	ng 1995 diang 1994 kilang danping menandak pertabbahkan		
8.	Finding area as double integrals			2.4
9.	Evaluating triple integrals			
10.	Finding volume as triple integrals		8	
Theor	y: 45 Hrs Tutorial: - Pract	ical: 30 Hrs	Project:	Total Hours: 75 Hrs
TEXT	BOOKS:	, -		
1.	T. Veerarajan, "Linear Algebra and Partial Dif	The second secon		
. 2.	3 , 8 8			
3.	W. Yang, Y. K. Choi, K. Jaekwon, M. C. Kim, MATLAB", CRC Press Publishers, 1st Edition,		. Im, "Engineering M	lathematics with
REFE	RENCE BOOKS:			
1.	S. Lipschutz and M. L. Lipson, "Linear Algebr			
2.	E. Kreyszig, "Advanced Engineering Mathema			
3.				
4.	B. V. Ramana, "Higher Engineering Mathemat			
5.	, , ,			
6.	D. Xu, "Calculus problem solutions with MAT	LAB", Walter de	Gruyter Publishers,	1" Edition, 2020.

Dr. S. JAYABHARATHI

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

BoS Date: 08. 07. 2023

Dr. S. JAYABHARATHI ASSOCIATE PROFESSOR & HEAD DEPARTMENT OF MATHEMATICS, ONA COLLEGE OF TECHNOLOGY. SALEM-636 005, Tamilnadu. Ph: 0427 - 4099995.

Dr. M. RENUGA

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

B.E / B.Tech Regulations 2023

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

U	23CF	HE10	4C		CHE		RY FOR IGINEE		RICAL		1 3	0 T	P 0	0	C 3			
Cours	se Ot	utco	mes	L.,,														
At the	e end	l of	the cou	rse, the	studen	t will	be able	to		-					-			
CO	1:	Ou	tline the	ions.														
CO	2:	Des	scribe t		tructio							ons of energy storage devices for						
CO	3:		•			•	ers, pol					nerizat	ion tec	hnique	s and			
CO4: Explain the electrochemical processes carried out in electronic industries.											ries.							
CO5: Discuss the principle, advantages and applications of organic electronic devices.											onic m	aterials	in elec	tronic				
Pre-re	equis	site:	Basic k	nowled	lge on t	he cor	cepts of	organi	c, inorg	anic an	d physic	al chen	nistry.					
			(3/2	/1 indic	ates the		CO/PO, gth of co				Mediun	n, 1-We	ak					
COs	(3/2/1 indicates the strength of correlation) 3-Strong, 2-Medium, 1-Web Programme Outcomes (POs) and Programme Specific Outcomes PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11																	
	PC	D1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12	PSO1	PSO			
CO1	3	3	2												2			
CO2	3	3	2	(4)				2			7.20				2			
CO3	5	3	2	4				2							2			
CO4	3	3	2					2							2			
CO5	3	3	2					2							2			
						Co	urse Ass	essme	nt meth	ods								
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Unit 02: CHEMISTRY OF ENERGY STORAGE DEVICES

9 Hours

Reversible and irreversible Cells – Batteries - types of batteries – battery characteristics-voltage-current-capacity-electricity storage density-power-discharge rate-cycle life-energy efficiency and shelf Life – 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: ELECTROCHEMICAL PROCESSES IN ELECTRONIC INDUSTRIES

9 Hours

Electroplating – Principle and process - plating parameters- current and energy efficiency - Electroplating of nickel - Fundamentals of electroless deposition – electroless plating of nickel, fabrication of PCB's - electrochemical etching of copper from PCBs - Anodizing - definition, principle and working methodology of aluminium anodizing process – Sensors – Chemical, optical and heat sensors – definitions and examples.

Unit 04: POLYMER CHEMISTRY

9 Hours

Nomenclature of 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 – techniques of polymerization-bulk and solution only – Plastics – moulding constituents of plastic – moulding of plastics into articles-Injection, Compression and Blow moulding – Thermoplastic and Thermosetting Resins – Engineering Plastics-Nylon 6,6-Polycarbonate and Polyurethane-preparation-properties and applications – Rubbers-types-applications-vulcanization of rubber.

Unit 05: CHEMISTRY OF ORGANIC ELECTRONIC MATERIALS

9 Hours

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 polymer – structure-properties and applications of Polythiopene – Conducting polymers, types and applications – Organic Light Emitting Diodes (OLEDs) - construction-working principle and applications in electronic Industries.

Theory: 45 Hrs

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

TEXT BOOKS

1. P.C.Jain and Monica Jain, "Engineering Chemistry" Dhanpat Rai Pub, Co., New Delhi, 17th Edition, 2018.

2. 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.
2.	Electroplating, Anodizing and Metal treatment", Hand book, NIIR board, 2004.
3.	Hagen Klauk, "Organic Electronics: Materials, Manufacturing and Applications", Wiley-VCH, 2006.
4.	A. Ravikrishnan, "Engineering Chemistry", Sri Krishna Publications, Chennai, 2017.

Chaw

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

4.47

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

_	U23CHL111B (Common to M				STRY LABORATORY					+	-	-	+		
			(Con	nmon to	o Mech	anical,	EEE, &	FT bran	nches)	0	0	2	0	1	
Cour	se Ou	tcomes													
At th	e end	of the co	urse, the	studen	t will b	e able	to								
СО	1:	Analyse	he given	water s	ample	to deter	mine th	e amou	nt of ha	ardness a	ind alka	alinity.			
CO	2:	Analyse	he quali	y of bra	ass by e	estimati	ng copp	er and	estima	te the an	nount o	f HCl i	n given		
		sample b	y pH me	try, con	ducton	netry.									
СО		Estimate the amount of ferrous ion in the given water sample and determine the molecular weight of water soluble polymer.													
		ite: Capal						iper, Tr	avellin	g micros	scope, S	Spectron	neter, a	ble to	
handl	le bure	ette, pipet	te and sta	ındard 1	neasuri	ing flask	ζ.								
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CO2	3	2		1		1			1					2	
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CIE t	est I (15)			R	TPS (10))								
Quiz	1 (5)				R	Record (10)						ما ما		
CIE t	est II	(15)			Т	Total CIE:60 marks						Course end survey			
Quiz					S	emester	End E	xamina	tion (40	marks)					
-		XPERIM		, ,		1 1 177	DTA	-11				·			
1	Estim	nation of	naraness	or wate	er samp	ne by Ei	DIA m	etnoa.							
2	Estim	nation of a	alkalinity	of wate	er samp	ole by ir	ndicator	metho	d.				-		
		timation of alkalinity of water sample by indicator method.													

4	Estimation of HCl acid by pH metry.						
5	Estimation of HCl by conductometry. (HCl vs NaOH)						
6	Estimation of mixture of acids by conductometry. (HCl + CH3COOH vs N	IaOH)					
7	Estimation of ferrous ion by potentiometric titration.						
8	Determination of molecular weight of a polymer by viscosity measurement	nts.					
		TOTAL: 30 HOURS					

Chall

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

of for

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

				PRO	DBLEN		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 ₁	:	Dev	elop al	gorithn	nic solu	tions	to simple	compi	ıtationa	l probl	ems				
CO	2:	Wri	Write simple Python programs												
CO	3:	Wri	Write programs with the various control statements and handling strings 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		
CO			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					1000				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		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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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	Г ВООКЅ						
1.	Reema Thareja, "Edition 2023.	Problem Solving a	and Programming	with Python" Oxi	ford University Press, 2 nd		
REFI	ERENCES						
1.	Ashok Namdev k Python" Mc-Graw			"Programming an	d Problem Solving with		
2.	Charles Dierbach, "Introduction to Computer Science using Python: A Computational Problem Solving Focus" Wiley India Edition, 2013.						
3.	Allen Downey, "Think Python: How to Think Like a Computer Scientist" O'Reilly Media, 2nd Edition 2016.						
4.	Timothy A Rudd	" Evploring Putho	n" Mc-Graw Hill	Education (India)	Drivata Ltd. 2015		

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U23PPL112

PYTHON PROGRAMMING LABORATORY

L T P J C
0 0 2 0 1

(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-	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

	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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Programmer: BE & B Tech

B.E / B. Tech Regulations 2023



0	3								
	- 0								
Construct –Ellipse, Parabola, Hyperbola, Cycloids and Involutes.									
Draw the projection of Point, Line and Plane surfaces.									
Draw the projection of simple solids by rotating object method.									
PSO1 PS	PSO								
1	30								
1									
2	2								
1 2	2								
1 2	2								
1									
ct									
survey									
Hours									
s	t survey								

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Programme: B.E - Mechanical Engineering

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Unit 02: PROJECTION C	OF POINTS, LINE	ES AND PLANE S	URFACES (CAD		182 27
software). Orthographic projection-	main aimles mainsir	aal planas First an	ale projection-pro	jection of	
points. Projection of stra	ight lines (only)	First angle projec	tions) inclined to	both the	9 Hours
principal planes -Determ	ination of true le	engths and true in	nclinations by rot	ating line	
method. Projection of pl	anes (polygonal a	and circular surfa	ces) inclined to o	ne of the	
principal plane by rotatir			1		
		-	8		
Unit 03: PROJECTION O	OF SOLIDS (CAI) software).			
Projection of simple soli					9 Hours
inclined to one of the pr	incipal planes and	d parallel to the o	ther by change o	f position	9 Hours
method.					
II 's OA DROJECTION'	DE CECTIONIED	COLIDE AND DE	VEI ODMENIT O	E	<u> </u>
Unit 04: PROJECTION C SURFACES (CAD softw		SOLIDS AND DE	VELOTIVIENT O		
Section of solids in simp		when the cutting	plane is inclined	to one of	
the principal planes and					9 Hours
is not required). Deve					
pyramids cylinders and o	_	10			
	181	E 10.7 (1			
Unit 05: ISOMETRIC	TO ORTHOGRA	APHICS PROJEC	TION- (Manual	drafting).	
Representation of three of					
of multiple views - First					× 8
view to orthographic vie	ws.				9 Hours
814					Filouis
Practicing three dimension	onal modelling of	simple objects us	ing CAD Software	e (Not for	
examination)					9
				1	
Theory: 45 Hrs	Tutorial:	Practical:	Project:	Total F	Iours: 45 Hrs
TEXT BOOKS		2			2 2
1. Bhatt N.D. and F 2019.	Panchal V.M., "E	ngineering Drawi	ng", Charotar Pul	olishing Hou	se, 53rd Edition,
2. Natrajan K.V., "A	Text Book of En	gineering Graphic	s", Dhanalakshmi	Publishers, C	Chennai, 2018.
3. Parthasarathy, N.	S. and Vela Mura	li, "Engineering D	rawing", Oxford U	Jniversity Pro	ess, 2015
4. P.Suresh., "Engin	neering Graphics	and Drawing",	Sonaversity, So	na College	of Technology,
Salem, Revised ed	lition, 2012.				

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Programme: B.E - Mechanical Engineering

Regulations 2023

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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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	TAM101	கமிமர்	மரபு / 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	Describe Tamil Language and Literature							
CO2:	Analyse H	Analyse Heritage - Rock Art Paintings To Modern Art - Sculpture							
CO3:	Explain Folk and Martial Arts								
CO4:	Describe T	Describe Thinai 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 (30) CIE test II (30) CIE test II (30) CIE test III (40) Total CIE: 100 marks Semester End Examination: NIL Course						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 கக்கியங்கல 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 ி - 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 : மரபு - சி ற்	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றும - பாறை ஓவி ப க் கலை	நில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக நி இலக்கியம், ஆழ்வார்கள நவீன இலக்கியத்தின் வ ம் பாரதிதாசன் ஆகியோரிவ யங்கள் முதல் ஓவியங்க ை	ருக்குற த்தில் ர் மற் பளர்ச்சி ர் பங்	தளில் சப நும் ந ப – த களிப்ப	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 : மரபு - சிற் நடுகல் பு அவர்கள ம் களை சனையில்	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றுட - பாறை ஓவி பக் கலை pதல் சிற்பங்க ந தயாரிக்கும் திருவள்ளுவ நாதஸ்வரம்	தில் பகிர்தல் அறம் - தி காப்பியங்கள், தமிழக இலக்கியம், ஆழ்வார்கள நவீன இலக்கியத்தின் வ ம் பாரதிதாசன் ஆகியோரிவ ய ங்கள் முதல் ஓவியங்கள 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 : மரபு - சிந் நடுகல் பு அவர்கள ம் கலை நனையில் , யாழ், ல்களின் ப 3: நாட்டுப் பு	இலக்கியத்த தமிழ்க் க்கம் - பக்தி ர் - தமிழில் தியார் மற்றுட - பாறை ஓவி 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 யங்கள் முதல் ஓவியங்கள கள் வரை — ஐம்பொன் ம் கைவினைப் பொருட்க சிற்பங்கள் - நாட்டு ர் சிலை - இசைக் கருவ - தமிழர்களின் சமூக	ருக்குற த்தில் ர் மற் பளர்ச்சி ர் வண சிலை எர், செ ப்புறத் பெடு	தளில் தும் ந தனிப்ப 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 : மரபு - 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 யங்கள் முதல் ஓவியங்கள 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 கெள் 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 : மரபு - சிற் நடுகல் பு அவர்கள ம் களை அவர்கள ம் களை அவர்கள ம் களை அவர்கள சனையில் , யாழ், ல்களின் ப செருக்குவ	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 யங்கள் முதல் ஓவியங்கள் கள் வரை — ஐம்பொன் ம் கைவினைப் பொருட்க சிற்பங்கள் - நாட்டு ர் சிலை - இசைக் கருவ - தமிழர்களின் சமூக ர் மந்றும் வீர விளையாட்டு	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					
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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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		
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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	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

. .

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:		, 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 seri bearant		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 nit 05:	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	S
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	DL1102	Germa	ın .		L	T	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	ourse Outcomes the end of the course, the studen	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)	^k							
								Hours	
Hr 1-2: G			Japanese alphabet: 10	04 Hiragana an	d 104	Kataka			.
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 nit 02:	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 nit 02: 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
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: Hr 19-20	dentifying wo elf-introduction asking for directions asking for directions asking light : Expressions : Verbs used : Adjectives : Ways to sho	rds from pictures of consections when shopped verb Conjugated to conversation to use verbs from for giving things	ping ions morning to night		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: Hr 19-20 Hr 21-22	dentifying wo delf-introduction asking for direction Time words at Making light: Expressions: Verbs used: Adjectives: Ways to sho	ections when shopped to use verbs from for giving things we liking for the Jache location of things	ping ions morning to night panese language gs (or where things a		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: Hr 19-20 Hr 21-22 Hr 23-24	dentifying wo delf-introduction asking for direction Time words at Making light: Expressions: Verbs used: Adjectives: Ways to sho	rds from pictures of consections when shopped verb Conjugated to conversation to use verbs from for giving things	ping ions morning to night panese language gs (or where things a		d 104	Kataka	na lette	Hours Hours Hours	3
Hr 1-2: G Hr 3-4: Id Hr 5-6: S Unit 02: Hr 7-8: A Hr 9-10: Hr 11-12 Unit 03: Hr 13-14 Hr 15-16 Hr 17-18 Unit 04: Hr 19-20 Hr 21-22 Hr 23-24 Unit 05:	dentifying wo delf-introduction asking for direction Time words at Making light: Expressions: Verbs used: Adjectives: Ways to show Describing to Japanese nu	ections when shopped verb Conjugate to use verbs from for giving things we liking for the Jahe location of thin mbers and counting	ping ions morning to night panese language gs (or where things a		d 104	Kataka	na lette	Hours	3
Hr 1-2: G Hr 3-4: Id Hr 5-6: S Unit 02: Hr 7-8: A Hr 9-10: Hr 11-12 Unit 03: Hr 13-14 Hr 15-16 Hr 17-18 Unit 04: Hr 19-20 Hr 21-22 Hr 23-24 Unit 05: Hr 25-26	dentifying wo delf-introduction asking for direction words at the Making light: Expressions: Verbs used: Adjectives Ways to show the Describing to Describing to Making communication words.	ections when shopped and Verb Conjugated to use verbs from for giving things we liking for the Jack the location of thing the mbers and counting the parisons	ping ions morning to night panese language gs (or where things a	re)		Kataka	na lette	Hours Hours Hours	3
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Dr. M.RENUGA,
Professor & Head, Department of Humanities & Lan

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		C	ourse Assessment	methods				
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	out directions							
nit 05: Fu	ture						3 Hou	rs
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	g about plans							
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: Electrical and Electronics Engineering

S.No	Course Code	Course Title	L	T	P	J	c	Category	Total Contact Hours	Course Type*
	0 8	Theory courses			-					
1.	U23ENG201A	Technical English	2	0	0	0	2	HS	30	T
2.	U23MAT202B	Transforms and Differential Equations	3	1	0	0	4	BS	60	TT
3.	U23PHY203D	Engineering Physics	3	0	0	0	3.	BS	45	T
4.	U23EE201	Electrical Circuit Analysis	3	1	0	0	4	PC	60	TT
5.	U23ME204	Thermodynamics and Fluid Machines	3	0	0	0	3	ES .	45	T
6.	U23TAM201	தமிழரும் தொழில்நுட்பமும் / Tamils and Technology	1	0	0	0	1	HS	15	T
7.	U23GE201	Basic Aptitude -II	2	0	0	0	0	AC	30	T
-		Practical course	S							
8.	U23PHL210B	Engineering Physics Laboratory	0	0	2	0	1	BS	30	L
9.	U23EE202	Electrical Circuits Laboratory	0	0	3	0	1. 5	PC	45	L
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10.	U23OL1201	French - II						: : : : : : : : : : : : : : : : : : :	15	T
11.	U23OL1202	German - II				5			15	T
12.	U23OL1203	Japanese - II	1	0	0	0	1	OL	15	T
13.	U23OL1204	Korean - II						,	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

Approved By

M.LM	S. Paku	Nivakiner	J. Oulon	00,00
Chairperson, Science and Humanities BoS	Chairperson, EEE BoS	Member Secretary, Academic Council	Dean-Academics	Chairperson, Academic Council & Principal
Dr.M.Renuga	Dr.S.Padma	Dr.R.Shivakumar	Dr.J.Akilandeswari	Dr.S.R.R.Senthil Kumar

Copy to:-

HOD/ Electrical and Electronics Engineering, Second Semester B.E. EEE, Students and Staff, COE PRINCIPAL

SONA COLLEGE OF TECHNOLOGY SALEM-636 005

12.01.2024 Version 1.0 Semester 2

B.E/B.Tech Regulations-2023

^{**}Students may opt for foreign languages viz., German/French/Japanese/Korean with additional one credit (Not accounted for CGPA calculation)

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CO														
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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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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,
W - 62

SEMESTER - II TR				[RA]	ANSFORMS AND DIFFERENTIAL EQUATIONS							L	T	P	J	(
					on to BIOMEDICAL, ELECTRONICS AND MMUNICATION & ELECTRICAL AND ELECTRONICS ENGINEERING							3	1	o	0	4
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applications - Solution	on of second or	der linear or	linery differentia	nvolution theorem and all equations with const	its
coefficients using Lap	lace transform	dei illeai orc	imary differentia	al equations with const	ant
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			Committee Francis	transform pair and th	S
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simple functions – Par	seval's identity	osine transform	ns pan and men	properties –1 ransforms	of
	DIFFERENTIAL	LEQUATION	JC	10.77	
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form of partial differen	ential equations	Second ord	er linear partial	differential equation w	t's
constant coefficients.	ontial equations	becond ord	ei iiiieai paitiai	unferential equation w	ıtn
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Reprint, 2017.	ravanoou Engh	recing water	manes, whey	ruonsners, to Edino	n,
	R. Garg. "Advar	nced Engineer	ing Mathematics	", Khanna Publishers,	ı st
Edition, 2018.	ζ,	and angule	g ividuicinance	, Knama i uonsiicis,	1
	Higher Engineerin	ng Mathematic	s". Khanna Publ	ishers, 44 th Edition, 2018	-
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CO2:	Di	scuss the	e dual r	ature c	of mat	ter and ra	diation	and th	e appli	cation o	f wave	nature (of parti	cles.
CO3:	De	escribe th	ne basic	compo	nents	of lasers.								
CO4:	Di	Differentiate the electrical and thermal conductivity of metals.												
CO5:	Eli	Elucidate the classification and theory of semiconducting materials.												
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	Ва	sic Knov	vledge	in atom	nic phy	ysics and	optics				50.05 (PESMO 255)			864.E-17.1027
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Semester II

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

Unit 02: QUANTUM PHYSICS

9 Hours

of ` classical theory Dual nature of matter and radiation Limitations Compton effect - Expression for Compton shift (no derivation) - 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 - Transmission 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_2 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. B 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. V. Raghavan, "Materials Science and Engineering: A First Course" Prentice Hall India Learning Private Limited, 6th Edison, 2015.

- 4. William D. Callister Jr., David G. Rethwisch, "Callister's Materials Science and Engineering", 10th Edition, Global Edition 2019.
- 5. R.Wolfson, "Essential University Physics", Volume 1 & 2. Pearson Education (Indian Edition), 2009.

12.1. rom

Dr. C. SHANTHI, M.Sc., M.E., Ph. Professor of Physics
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Sona College of Technology (Autonomous,
SALEM-636 005.

Dr. M.RENUGA,
Professor & Head,
Department of Humanities & Languages,
Sona College of Technology,
SALEM - 636 0000

U23EE20	3EE201	ELECTRICAL CIRCUIT ANALYSIS	L	Т	P	J	C
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CO2:	apply the co	oncepts of different theorems to solve complex prol	olems in	DC circ	uits	to the	
CO3:	analyze the	steady state behavior of series and parallel RL, RC	, and RL	C circui	ts.	KHT 8	20 su
CO4:	analyze the	transient behavior of RL, RC, and RLC circuits wi	th step ar	d sinus	oidal ex	citatio	ns.
CO5:		three-phase balanced and unbalanced systems in sta					igijeza un-tiju
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CO5	3	3	2	2		2						3	3	3

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	Indirect	
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CIE test II (8) CIE test III (8)	Attendance (5)	Course end survey
	Total CIE: 40 marks	Course end survey
Assignment/seminar/Quiz (5)	Semester End Examination (60)	

Unit 01: DC AND AC FUNDAMENTALS

Introduction – Voltage, Current, Power and Energy – Circuit Elements– Ohm's law – Kirchhoff's Laws – R, L & C in series and Parallel – Voltage Division – Current Division – Star-Delta Transformation – Energy Sources – Source transformations – Sine Wave Equation – Terminologies – RMS Value, Average Value, Form factor and Peak factor for Sine Waveform.

Unit 02: DC NETWORK ANALYSIS

12 Hours

12 Hours

Mesh Analysis — Nodal analysis — Superposition Theorem – Thevenin's Theorem – Norton's Theorem – Maximum Power Transfer Theorem – Reciprocity Theorem.

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

Unit 03: AC NETWORK ANALYSIS

12 Hours

RL, RC and RLC - Series and Parallel circuits - Impedance, Current, Voltage, Power and Power Factor -Impedance Triangle-Power Triangle - RLC Series and Parallel Resonance-resonant frequency-Q factor-Bandwidth

Unit 04: CIRCUIT TRANSIENT ANALYSIS

12 Hours

Introduction - transient response of RL and RC for step and sinusoidal inputs -transient response of RLC series circuit for step input using Laplace transform method. (only qualitative treatment for sinusoidal input)

Unit 05: THREE PHASE CIRCUITS

12 Hours

Polyphase Systems - Advantages of a Three-Phase System - Generation of Three-Phase Voltages - Phase Sequence - Voltage, Current, and Power in a Star Connected and Delta-Connected System - Three-Phase Balanced & Unbalanced loads — Power and power factor Measurement by two wattmeter method.

- 7	Theory: 45 Hrs	Tutorial: 15 Hrs	Practical:	Project:	Total Hours: 60 Hrs
TEX	T BOOKS		5 11 020 6	MANAGEMENT CONTRACTOR	
1.	Shyam Mohan S 5 th edition, 2015	S.P., Sudhakar A, "Cir	rcuits and Netwo	ork Analysis & S	ynthesis", Tata McGraw Hill,
2.	V N Mittle and A	Arvind Mittal, "Basic	Electrical Engine	eering", McGraw	Hill, 2 nd edition, 2018.
REFI	ERENCES			2 2	5 8 6 10
1.	Charles K Alexa 7 th edition, 2022.	nder, Matthew Sadik	u, Fundamentals	of Electric Circu	uits, McGraw Hill Education,
2.	William Hayt, Ja Graw Hill Educa	ack Hemmerly, Jaime tion, 9 th edition, 2020.	Phillips, Steven	n Durbin, "Engin	eering Circuit Analysis", Mc
3.	Ravish, R. Singh	, Network Analysis &	Synthesis, McG	raw Education, 2 ⁿ	d Edition, 2019.
4.	Arumugam M an	d Premkumaran, "Ele	ctric Circuit The	ory", Khanna Pul	olishers, 5 th Edition, 2000.

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

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Sona College of Technology Salem-636 005. Tamil Nadu.

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	capacities for various air-conditioning components by using psychrometric charts. Analyze the performances of hydraulic turbines and discuss the working principle of pumps														
	Analyze the performances of hydraulic turbines and discuss the working principle of pumps. e-requisite: Fundamentals of Mathematics, Physics.														
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Kelvin-Planck and Clausius Statements of the Second Law - Heat engine, Heat pump and Refrigerator, Equivalence of kelvin-Planck and Clausius statements, Reversible and Irreversible processes - Carnot Cycle, Carnot theorem and its corollaries, Concept of entropy, simple problems.

Unit 03: STEAM PROPERTIES AND CONVENTIONAL POWER PLANTS

9 Hours

Steam properties- enthalpy, entropy, specific volume, Dryness fraction - Use of Steam Table and Mollier Chart. - Simple Rankine cycle, simple problems.

Working of Steam, Gas Turbine, Nuclear and Diesel Power plant.

Unit 04: REFRIGERATION & AIR CONDITIONING

9 Hours

Refrigeration-COP-Vapour compression and vapour absorption Refrigeration system. Refrigerants, Desirable properties of refrigerants (Qualitative).

Study of Psychrometric terms, psychrometric process- psychrometric chart, simple problems -Air conditioning – Types, working of summer and winter air-conditioning.

Unit 05: HYDRAULIC TURBINES & PUMPS

9 Hours

Layout Hydro power plant – Hydraulic Turbines - Classification and working principle. Pelton wheel turbine - Francis turbine - Kaplan turbine - Velocity triangle - work done – Efficiencies - Performance calculations.

Pumps- Classification- Working principle of Centrifugal Pump, Reciprocating Pump, Comparison (Qualitative)

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T]	heory: 45 Hrs	Tutorial:	Practical:	Project:	Total Hours: 45 Hrs								
TEXT	BOOKS												
1.	1. Mahesh M Rathore, "Thermal Engineering" Tata McGraw-Hill Education (India), 2010												
2.	2. R.K.Rajput, "Thermal Engineering", Laxmi Publications, New Delhi, 11th edition, 2020.												
3.	R. K. Bansal, "Flui	d Mechanics and I	Hydraulics Machine	es, (10th edition), La	axmi publications (P) Ltd, New								
	Delhi, 2019.												
REFE	RENCES												
1.	Yunus A Cengel, "	Thermodynamics:	An Engineering Ap	proach" McGraw H	ill Education (India), 9 th Edition								
	2019.												
2.	P.K.Nag, "Engine	ering Thermodyna	amics" McGraw Hi	ll Education (India),	Sixth Edition, 2018.								
3.	R.S.Khurmi, J.K.C	Gupta, "A Textboo	ok of Thermal Eng	gineering" S. Chand	d Publishing, New Edition,								
	2020.												

Sukumar Pati., "Fluid Mechanics and Hydraulics Machines", Tata McGraw Hill publications (p) Ltd,

R.K.Rajput, "Power Plant Engineering", Laxmi Publications, New Delhi, 5th edition, 2016.

Yunus A Cengel, "Fluid Mechanics" McGraw Hill Education (India), 4th Edition 2019.

Semester 2

Chairman Mechanical- BOS

PROFESSOR & HEAD
DEPT. OF MECHANICAL ENGG.
SONA COLLEGE OF TECHNOLOGY

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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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T	heory: 15 Hrs	Tutorial:	Practical:	Project:	Total Hours: 15 Hrs
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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.

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Professor & Head,
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SALEM - 636 005.

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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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	PO1	Pro PO2	ogramm PO3	PO4	PO5	PO6	rogramm PO7	PO8	P09	PO10	PO 11	a A. Test	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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Company Limited 2019.

2.

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

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Cour	se Ou	ıtcor	nes		SA,		187								
At th	e end	l of t	he cou	rse, the	studer	t will	be able	to							
СО	1:	Det	ermine	the opt	ical, the	rmal a	nd elect	rical pr	operties	of mat	erials by	variou	ıs physi	cs labo	ratory
		equi	ipment.												
CO	2:	Acc	ess, pro	ocess ar	nd analy	se scie	entific in	format	on.						
CO	3:	Solv	ve prob	lems in	dividua	lly and	collabo	ratively	7.				. W. W. W. Heege		August 10
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CIE	test I ((15)				I	RTPS (1	0)							10 10
Quiz	1 (5)					I	Record (10)							
	test II					,	Γotal CI	F:60 m	arks				Course e	nd sur	vey
				e - 12 - 24						. (40	1)				
	2 (5)		DEDIM	ENTC		1	Semeste	r End E	xamına	tion (40	marks)				1 No. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1			PERIM nation o		ickness	of a th	nin wire	by forn	ning int	erferenc	ce fringe	es using	g air we	dge	
	appa	ratu	s.												
2			nation of meter.	of veloc	ity of ı	ıltrasor	nic wave	es and c	ompres	sibility	of the g	given li	quid us	ing ultr	asonic
3	Dete	ermir	nation o				diode l								8 -
4							podium								
5	Determination of acceptance angle and numerical aperture of an opt										re using	g diode	laser.		
6	Dete	ermin	nation o	of coeff	icient o	f visco	sity of li	iquid by	Poiseu	ille's m	nethod.				

90		TOTAL: 30 HOURS
10	Determination of specific resistance of a given wire using Carey Foster's	bridge.
9	Determination of band gap of the given semiconductor diode.	
8	Determination of the thermal conductivity of a bad conductor using Lee's	Disc apparatus.
7	Determination of wavelength of mercury spectrum using spectrometer.	

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P

Chull₁₂₋₁. 224

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Head, Department of Sciences
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SALEM-636 005.

U23EE202 ELECTR		CTRIC	CAL CIRCUITS LABORATORY				0	0	3	0	1.5			
Cours	se Outco	omes					7							-
At the	e end of	the cou	rse, the	studer	t will b	e able	to			•				
CO1: Analyze the basic laws and theorems of electric circuits.											A SASSECTOR			o de espera acumina de la constitución de la Residente de la R
CO	2: A1	nalyze th	e single	phase	and thr	ee phas	e circui	ts.	***************************************				1	
CO	3: De	esign and	analys	e a circ	uit for	specific	applica	tion.						- ,
					C	O/PO,	PSO M	apping	,					
		(3/2	/1 indic	ates the	e streng	th of co	orrelatio	n) 3-Str	ong, 2-	Mediun	n, 1-We	ak		
CO-]	Progran	nme Oı	ıtcome	s (POs)	and Pro	gramn	ne Speci	fic Outo	comes (PSOs)		
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	2	2			3	2	2 -	. 3	3	3
CO2	3	3	2	2	2	2			3	2	2	3	3	3
CO3	3	3	2	2	2	2			3	2	2	3	3	3
					Cou	rse Ass	essmer	nt meth	ods					
				I	Direct							Indir	ect	
CIE te	est I (15))-			RTPS	(10)								
Quiz I- (5)			Recor	d (10)				-						
CIE te	est II (15	5)			Total	CIE: 60	marks		+		Col	urse end	i surve	y
Quiz:	II- (5)				Seme	ster En	d Exam	ination	(40 mai	rks)				
	-0. 1		T. 777	ADTAR	/ m: 1	~ 1				•				

Students may use LTSPICE / TinkerCad tool for simulating the below experiments.

List of Experiments:

- 1. Verification of Ohm's law and Kirchoff's laws.
- 2. Verification of Superposition theorem.
- 3. Verification of Thevenin's theorem.
- 4. Verification of Norton's theorem.
- 5. Verification of Maximum power transfer theorem.
- 6. Verification of Reciprocity theorem.

Tutorial: --

Theory: --

- Calculation of Resonant Frequency, Bandwidth and Q factor for RLC Circuits.
- 8. Determination of RMS Value, Average Value, Form factor and Peak factor for Sinusoidal Waveform.
- 9. Simulate the transient behaviour of RL and RC circuits for various inputs.

Practical: 45 Hrs

- 10. Simulate the transient behaviour of RLC circuits for various inputs.
- 11. Measurement of voltage, current and power for a 3 phase load.
- 12. Power and power factor measurements by two wattmeter method.

Projects PADMA OWAE HOLDS: 45 Hrs

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Professor and Head, Department of EEE, Sona College of Technology

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11230	U23OL1201		French - II		L	T	P	J	С		
	OLIZOI				1	0	0				
Course C	Outcomes	2							1		
At the en	d of the cour	se, the student w	ill be able to								
CO1:	Accept and	refuse of an invit	ation, give some ins	truction of do's	and do	n'ts, co	nverse	in			
600	commercia	centres, write an	invitation								
	CO2: Describe a city, locate a place in a city, ask further details, describe one's hometown CO3: Talk about things around us, recite a past event, identify sign boards, express agree and disagree.										
CO3:	Talk about things around us, recite a past event, identify sign boards, express agree and disagree, express obligation and prohibition, sell an object in online										
CO4:	Talk about	Express obligation and prohibition, sell an object in online Talk about one's goals, express one's feelings, write a list of things to do, express an opinion, talk									
001	about weath	about weather, draft a mail response									
CO5:	Express one's interest and wish, describe a pet animal, express one's aversions, encourage others, write to ask for a help, narrate a past event, write a biography								irage		
	others, write	e to ask for a help	, narrate a past event	, write a biogra	phy		,	011000	nugo		
			Course Assessment								
		Direc	at .				Indirec	f			
CIE test I	(30)		Total CIE: 100 ma	rks							
CIE test II (30)		Semester End Exa	mination: NIL		Cours	se end s	urvev				
CIE test II	II (40)			a a				J			
Unit 01:							3	Hours			
Hr 2: City	shopping and	d services, conjug	ation: payer, manger	and acheter, ne	gative	senten	ce				
Hr 4: Imp	erative senter	ice, food and beve	rages, utensils, cutle	ries corckeries							
<u> 111 0. Qua</u> Unit 02:	illialive affic	ies, quantities, pro	onoun 'en', express a	appreciation, wr	ite an	invitatio			-		
	and localitie	Conjugation: nr	andra adiaatissa - C	_1_	4 1		3	Hours			
Hr 10: Tra	and localities	e activities prepo	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:		2					31	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	s: que and qui							
Hr 18: Imp	perative negative	tive, express oblig	ation and interdiction	n, online sale ar	nd resp	onse		1			
Jnit 04:				Р			3 1	Hours			
Hr 20: Pro	fessions, con	jugation: croire, v	oir, recent past tense	;					8		
Hr 24: Pro	veiling forma	illies, expressing a	bout health condition	on, future tense							
Jnit 05:	noun COD, u	ark about weather	condition, write abo	out one's plans a	na pro	jections					
	izenship and	solidarity, conjuga	tion: connaitre and	savoir dennis v	nende	ant	31	Iours			
Hr 28: Imp	parfait vs pass	sé composé, nature	e and environment, i	ndirect pronoun	s COI	anı					
Hr 30: Ani	mals, conditi	onal, talk on supp	orting others, write	a biography							
Theor	y: 15 Hrs	Tutorial:	Practical:	Project:		Total :	Hours:	15 Hrs			
TEXT BOO											
1. The	course facul	ty will provide rel	evant audios, videos	, handouts and	notes.						
2. Boo	oks : Saison (I	vietnode de frança	is, cachier d'activite	és)							
3. Ref	erence books	: La conjugaison,	Dondon, Echo	0							

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Sona College of Technology

B.E / B. Tech Regularione 10236

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 sentences /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		rks			•					
CIE test I	` '		Semester End Exa	mination: NIL		Course end survey				
Unit 01:	11 (10)						2.1	Hours		
Nominati	ve/accusative	case, adjectives					<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.	
Jnit 04:							3 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.

Dr. M.RENUGA,
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Sona College of Technology,
SALEM - 636

U23OL1203		2	Japanese - II			T	P	J	С
	021200	*	Japanese - 11		1	0	0 0		1
Course	Outcomes						<u> </u>		
At the e	nd of the cour	se, the student wi	ll be able to		~~				
CO1:	Use verbs in	n polite conversati	on or for dissuasion	and describe tv	vo diffe	erent ac	tivities		
CO2:	Demonstrat describe ex	e the application o	of causative verbs and	d those that exp	ress al	oility or	possib	ility, a	nd
CO3:	Use plain-st	tyle expressions, th	nose that state opinio	ns, and verbs a	nd adie	ectives	that go	with n	ouns
CO4:	Express ser received	ntences that use 'v	when' and 'if' and t	hose that desc	ribe ho	w serv	rices are	giver	anc
CO5:	Read 126 le and II to pas	etters of Kanji, and ss the Japanese La	d demonstrate adequ nguage Proficiency T	ate knowledge Test (JLPT) for	of the	lesson	s learnt	in Lev	els l
			ourse Assessment n						
		Direc	t				Indirec	f	
CIE test 1	I (30)		Total CIE: 100 mark	· · · · · · · · · · · · · · · · · · ·			mance		
CIE test I	II (30)		Semester End Exan			Cours	se end s	urvey	
Unit 01:		·····		s			3	Hours	
TT 0 4 4	1	os expressing reque							
Hr 5-6: D	Sking for permosescribing two	nission; making sta activities / Kanji 2	atements to prohibit	something / Ka	nji 11-	20			5
Hr 5-6: D U nit 02:	Describing two	activities / Kanji 2	atements to prohibit : 21-30	something / Ka	nji 11-	20	3	Hours	
Hr 5-6: D Unit 02: Hr 7-8: Hr 9-10:	Verbs that exp	activities / Kanji 2	atements to prohibit: 21-30 / Kanji 31-40 possibility / Kanji 41		nji 11-	20	3	Hours	
Hr 5-6: D Unit 02: Hr 7-8: Hr 9-10:	Verbs that exp	oress 'I have to'	atements to prohibit: 21-30 / Kanji 31-40 possibility / Kanji 41		nji 11-	20		Hours	
Hr 5-6: D Unit 02: Hr 7-8: Hr 9-10: Hr 11-12 Unit 03: Hr 13-14 Hr 15-16	Verbs that exp Verbs which of Describing ext Plain-style ext	press 'I have to' express ability or pressions / Kanji Sepressions / Kanji Sepress	atements to prohibit : 21-30 / Kanji 31-40 possibility / Kanji 41- 51-60 61-70 .' / Kanji 71-80	-50	nji 11-	20			
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