

VIVEKANANDHA



COLLEGE OF ENGINEERING FOR WOMEN

(An Autonomous Institution Affiliated to Anna University-Chennai Approved by AICTE – Accredited by NAAC and ISO 9001:2015 Certified) Elayampalayam , Tiruchengode – 637 205, Namakkal District, Tamilnadu.

CURRICULUM & SYLLABI – 2023

FOR

UNDER GRADUATE(UG)

B.TECH. – INFORMATION TECHNOLOGY

REGULATION 2023

(After 16th BoS)

CHOICE BASED CREDIT SYSTEM

(Applicable to the students admitted from the academic year 2023-2024 onwards)





B.TECH. INFORMATION TECHNOLOGY

Regulations - 2023

CHOICE BASED CREDIT SYSTEM

COLLEGE VISION

To impart value based education in Engineering and Technology to empower young women to meet the societal exigency with a global outlook

COLLEGE MISSION

- To provide holistic education through innovative teaching-learning practices
- To instill self confidence among rural students by supplementing with cocurricular and extra-curricular activities
- To inculcate the spirit of innovation through training, research and development
- To provide industrial exposure to meet the global challenges
- To create an environment for continual progress through lifelong learning

DEPARTMENT VISION

Providing quality education to transform students into technically competent skilled women to excel in IT profession, innovation and entrepreneurship

DEPARTMENT MISSION

- To empower knowledge on cutting-edge technologies in the field of Information Technology to develop innovative solutions for real-world problems
- To create a platform for innovation, research and new technology development
- To inculcate ethical practices, life-long learning and sense of societal responsibilities to support the career and personal development of the learner

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO 1: Graduates will have knowledge in various programming languages and continuous up-gradation in emerging IT technologies.

PEO 2: Graduates will be able to analyze and find solutions for current industrial needs.

PEO 3: Graduates will contribute to the society by their ethical behavior and effective teamwork

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1	Optimal Solution : Graduates will be able to develop computer applications for the real life problem using suitable programming platform
PSO2	Successful Career : Graduates will be able to think innovatively and work on multi-disciplinary areas

PROGRAMME OUTCOMES (POs):

Undergraduate engineering programmes are designed to prepare graduates to attain the following program outcomes:

- 1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public

health and safety, and the cultural, societal, and environmental considerations

- 4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Mapping of Program Educational Objectives with Program Outcomes

A broad relation between the program objective and the outcomes is given in the following table

Programme Educational Objectives						Prog Out	ramm comes	e				
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
I												
п								\checkmark	\checkmark			
Ш			\checkmark						\checkmark	\checkmark		

CURRICU	CURRICULUM BREAKDOWN STRUCTURE (Applicable to the Students admitted in the Academic Year 2023 -24)									
				Summa	ry of Cr	edit Dist	ribution			
				Se	mester				Total	Curriculum Content
Category	SEM1	SEM 2	SEM3	SEM4	SEM5	SEM6	SEM 7	SEM 8	No.of Credits	(% of total number of credits of the program)
HSMC	4	4							8	5.0%
BSC	8	8	4	4					24	15%
ESC	7	8							15	9.4%
PCC			14	14	14	15	7		64	39.7%
PEC					3	3	6	6	18	11.2%
OEC					3	3	3		9	5.6%
EEC	1		2		1	1	3	8	16	10%
МС				2					3	3.1%
СТС				1	1	1	1		4	2.5%
Semester wise total	20	20	20	21	22	23	20	14	160	100%



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN

(Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205



ENPOWE	Elayamparayam, findenengode – 037 205									
Programme	B. Tech. Pr	rogramme Co	ode	104		Regulation	on	202	23	
Department	INFORMATION TECHNOLO	GY				Semest	er	r I		
	(CURRICU	LUM	[
(A]	pplicable to the students admit	ted from the	e aca	demic	year 2	023 -202	24 on	wards)		
Course	Course Name	Category	Per	iods/V	Veek	Credit	M	aximum	Marks	
Code		Category	L	Т	Р	С	CA	ESE	Total	
		THEOR	Y	-						
U23MA101	Matrices and Calculus*	BSC	3	1	0	4	40	60	100	
U23EN101	English for Communication*	HSMC	3	0	0	3	40	60	100	
U23PH101	Engineering Physics ^{\$}	BSC	3	0	0	3	40	60	100	
U23CS101	Programming for Problem Solving*	ESC	3	0	0	3	40	60	100	
U23TA101	தமிழர் மரபு/Heritage of Tamils*	HSMC	1	0	0	1	40	60	100	
	THEORY INTE	GRATED	WIT	H PR	ACTI	CAL				
U23GE101	Engineering Graphics*	ESC	2	0	3	3	50	50	100	
	PRACTICAL IN	TEGRAT	ED V	VITH	THE	ORY				
U23GE102	Design Thinking*	EEC	1	0	2	1	50	50	100	
		PRACTIC	CAL							
U23PH102	Physics Laboratory ^{\$}	BSC	0	0	2	1	60	40	100	
U23CS102	Programming for Problem Solving Laboratory*	ESC	0	0	2	1	60	40	100	
	MANI	DATORY	COU	RSES	5					
-	Induction Programme*	3	3 Wee	eks		0	-	-	-	
U23MCFY1	Environmental Science and Engineering ^{\$}	MC	2	0	0	0	100) _	100	
					Total	20	520	480	1000	

BSC-Basic Science Courses, ESC-Engineering Science Courses, MC-Mandatory courses, HSMC- Humanities and Social Sciences including management courses, EEC – Employability Enhancement courses, CA- Continuous Assessment, ESE - End Semester Examination.

*Common for all branches

^{\$}Common for CSE, CST, IT ,BT & AI & DS

	VIVEKANANDH (Autonomous Ela	WEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205 Image: Content of Content o								2015 0.350 0.455	
Programme	B.Tech.	Pı	rogramme Co	ode	104		Regulatio	m	2023		
Department	INFORMATION TI	ECHNOLO	GY		Semester				П		
CURRICULUM (Applicable to the students admitted from the academic year 2023-2024 on w						4 onw	ards)				
Course		22		Per	riods/ V	Week	Credit	Max	kimum	Marks	
Code	Course Name		Category	L	Т	Р	C	CA	ESE	Total	
			THEOR	Y							
U23MA202	Complex Analysis a Ordinary Differentia Equations*	Complex Analysis and Ordinary Differential Equations*		3	1	0	4	40	60	100	
U23CH201	Engineering Chem	BSC	3	0	0	3	40	60	100		
U23EE201	Basic Electrical and Electronics Engineering [#]		ESC	3	0	0	3	40	60	100	
U23TA202	தமிழரும் தொழில் நட்பமும்/ Tamils and Technology*		HSMC	1	0	0	1	40	60	100	
	THEO	RY INTE	GRATED	WIT	'H PR	ACTIO	CAL				
U23CS204	Object Oriented Programming [@]		ESC	3	0	2	4	50	50	100	
U23EN202	Professional Communication*		HSMC	2	0	3	3	50	50	100	
	-		PRACTIC	AL							
U23CH202	Chemistry Laborat	ory ^{\$}	BSC	0	0	2	1	60	40	100	
U23GE204	Engineering Practi Laboratory*	ces	ESC	0	0	3	1	60	40	100	
		MANI	DATORY	COU	RSES	5					
U23MCFY2	Indian Constitution	n ^{\$}	MC	2	0	0	0	100	-	100	
						Total	20	480	420	900	

BSC-Basic Science Courses, ESC-Engineering Science Courses, MC-Mandatory Courses, HSMC- Humanities and Social Sciences including Management courses, CA-Continuous Assessment, ESE - End Semester Examination. *Common for all branches

[#]Common for BT,CSE,CST,IT,AI&DS

[@]Common for CSE,IT,CST, AI&DS

^{\$}Common for CSE,CST, IT,BT, AI&DS

Q	VIVEKANANDHA COLLEO (Autonomous Institution, Elayampalayar	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205								
Programme	B.E. / B. Tech. Pr	ogramme Co	ode	104		Regulatio	on	on 2023		
Department	INFORMATION TECHNOLO	GY				Semest	er	III		
(A	pplicable to the students admit	CURRICUI	LUM e aca	I ademic	e year 2	2023-202	4onw	ards)		
Course	Course Name	a .	Pe	eriods/	Week	Credit	Μ	aximun	n Marks	
Code	Course runne	Category	L	Т	Р	С	CA	ESE	Total	
	THEORY									
U23MA304	Discrete Mathematics ^{\$}	BSC	3	1	0	4	40	60	100	
U23IT301	Digital Systems Design*	PCC	3	0	0	3	40	60	100	
U23CS305	Computer Organization and Architecture ^{\$}	PCC	3	0	0	3	40	60	100	
U23IT302	Data Structures [#]	PCC	3	0	0	3	40	60	100	
U23CTCP1	Verbal, Quantitative Aptitude and Reasoning - I	EEC	2	0	0	1	40	60	100	
	THEORY INT	EGRATED	WIH	I PRA	CTICA	L				
U23CS306	Python Programming and Framework ^{\$}	PCC	3	0	2	4	50	50	100	
		PRACTIC	AL							
U23IT303	Data Structures Laboratory [#]	PCC	0	0	2	1	60	40	100	
U23CTCP2	Personality Development	EEC	1	0	2	1	60	40	100	
Total Credits 20 370 430						430	800			

BSC-Basic Science Courses, **ESC-**Engineering Science Courses, **MC-**Mandatory Courses, **HSMC-** Humanities and Social Sciences including Management courses, **CA-**Continuous Assessment, **ESE -** End Semester Examination.

[#]Common for, CSE, EEE, ECE, IT, BME & CST

*Common for CSE, IT

\$ Common CSE ,IT & CST

	VIVEKANANDH (Autonomous In Elay	IVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205 Image: Constraint of Constraints								
Programme	B.E. / B. Tech.	Pı	rogramme C	ode	104		Regulation	on	202	3
Department	INFORMATION TH	ECHNOLO	GY				Semest	er	IV	
		(CURRICU	LUM	[
(Ap	plicable to the stude	ents admitt	ed from the	e acad	lemic	year 20)23-2024	lonwa	rds)	
Course	Course Nan	ne		Per	iods/V	Veek	Credit	Ma	ximum	Marks
Code				L	Т	Р	С	CA	ESE	Total
			THEOR	Y			I		1	
U23MA405	Probability and Stati	stics ^{\$}	BSC	3	1	0	4	40	60	100
U23IT404	Database Management Systems ^{\$}		PCC	3	0	0	3	40	60	100
U23IT405	Agile Software Engineering*		PCC	3	0	0	3	40	60	100
U23CS408	Design and Analys Algorithms*	is of	PCC	3	0	0	3	40	60	100
U23ADL01	Additional Langua	ge	EEC	3	0	0	2	40	60	100
	THE	ORY INT	EGRATED	WIH	[PRA	CTICA	L			
U23CT406	Operating Systems	\$	PCC	3	0	2	4	50	50	100
			PRACTIC	AL						
U23IT406	Database Managen Systems Laborator	nent y ^{\$}	PCC	0	0	2	1	60	40	100
		CAREE	R TRACK	<u>CO</u>	URSE	S				
	Career Track Cour	rse – I	EEC	2 / 0	0	0/2	1	40 / 60	60 / 40	100
				То	otal C	redits	21	350 / 370	450/ 430	800

CA - Continuous Assessment, ESE - End Semester Examination, BSC - Basic Science Courses,

ESC - Engineering Science Courses, PCC – Professional Core Courses, MC- Mandatory courses, CTC –Career Track Course

^{\$} Common for CSE, IT & CST

* Common for CSE, IT

Г

٦

	VIVEKANANDH (Autonomous Ela	IVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205 Image: College of College								
Programme	B.E. / B. Tech.	Pı	rogramme C	ode	104		Regulatio	on	202.	3
Department	INFORMATION T	ECHNOLO	GY			Semester V				
(Ap	plicable to the stude	(ents admitt	CURRICU	LUM acad	I demic	year 20)23-2024	onwa	rds)	
Course				Per	riods/V	Veek	Credit	Ma	ximum]	Marks
Code	Course Name		Category	L	Т	Р	С	CA	ESE	Total
			THEOR	Y						
U23CS407	Theory of Comput	ation *	PCC	3	0	0	3	40	60	100
U23CT302	Artificial Intelligence ^{\$}		PCC	3	0	0	3	40	60	100
U23CS513	Microprocessor and Embedded System ^{\$}		PCC	3	0	0	3	40	60	100
U23CT406	Computer Networl	xs ^{\$}	PCC	3	0	0	3	40	60	100
	Professional Electi	ve-1	PEC	3	0	0	3	40	60	100
	Open Elective-1		OEC	3	0	0	3	40	60	100
			PRACTIC	AL		-				
U23CT407	Computer Networl Laboratory ^{\$}	KS	PCC	0	0	2	1	60	40	100
U23CS514	Microprocessor an Embedded System laboratory*	d	PCC	0	0	2	1	60	40	100
U23IT507	Mini Project - I		EEC	0	0	2	1	100	-	100
		CAREE	R TRACK	CO	URSE	S				
-	Career Track Cour	se - II	EEC	2/0	0	0 / 2	1	40 / 60	60 / 40	100
						Total	22	500 / 520	500 / 480	1000

CA - Continuous Assessment, ESE - End Semester Examination, BSC - Basic Science Courses, ESC - Engineering Science Courses, PCC – Professional Core Courses, HSC - Humanities and Social Science Courses, MC- Mandatory courses , EEC- Employability Enhancement Courses, PROJ-IT-Project, CA- Continuous Assessment, ESE - End Semester Examination, CTC –Career Track Course

^{\$} Common for CSE, IT & CST

* Common for CSE, IT



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai)

Elayampalayam, Tiruchengode – 637 205



									00		
Programme	B.E. / B. Tech.	Pr	ogramme Co	ode	104		Regulatio	m	2023		
Department	INFORMATION T	ECHNOLO	GY				Semest	er	VI		
		0	CURRICUI	LUN	1						
(Ap	plicable to the stude	ents admitt	ed from the	aca	demic	year 20	023-2024	onwa	urds)		
Course	Course Nar	ne		Per	riods/W	Veek	Credit	Ma	ximum I	Marks	
Code			Category	L	Т	Р	С	CA	ESE	Total	
			THEOR	Y	1	1	I		I		
U23CS512	Compiler Design ^{\$}		PCC	3	0	0	3	40	60	100	
U19IT608	Internet Programm	PCC	3	0	0	3	40	60	100		
U23CT508	Machine Learning	PCC	3	0	0	3	40	60	100		
-	Professional Election	PEC	3	0	0	3	40	60	100		
-	Open Elective-2		OEC	3	0	0	3	40	60	100	
	TH	EORY INT	TERGRATA	AED	PRAC	TICAL	4				
U23IT609	Mobile Applicatio Development Labo	n oratory	PCC	3	0	2	4	50	50	100	
			PRACTIC	AL							
U23CT509	Machine Learning Laboratory ^{\$}		PCC	0	0	2	1	60	40	100	
U23IT610	Internet Programm Laboratory*	ning	PCC	0	0	2	1	60	40	100	
U23IT611	Mini Project - II		EEC	0	0	2	1	100	-	100	
		CAREE	R TRACK	CO	URSE	S					
-	Career Track Cour	se -III	EEC	2	0	0 / 2	1	40 / 60	60 / 40	100	
						Total	23	510 / 530	490 / 470	800	

CA - Continuous Assessment, ESE - End Semester Examination, BSC - Basic Science Courses, ESC - Engineering Science Courses, PCC – Professional Core Courses, HSC - Humanities and Social Science Courses, MC- Mandatory courses, EEC- Employability Enhancement Courses, PROJ-IT-Project, CA- Continuous Assessment, ESE - End Semester Examination, CTC –Career Track Course

\$ Common for CSE, IT & CST

* Common to CST & IT

	VIVEKANANDHA COLLE (Autonomous Institution Elayampalaya	IVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode– 637205								
Programme	B.E. / B. Tech. P	rogramme Co	ode	104		Regulatio	Regulation 2023			
Department	INFORMATION TECHNOLO	GY				Semest	er	VII		
(Ap	plicable to the students admit	CURRICUI		I demic	year 20)23-2024	onwa	rds)		
Course	Course Name		Per	iods/V	Veek	Credit	Max	ximum	Marks	
Code	Course Ivallie	Category	L	Т	Р	С	CA	ESE	Total	
	THEORY									
U23CT715	Internet of Things ^{\$}	PCC	3	0	0	3	40	60	100	
U23IT712	Big Data Analytics*	PCC	3	0	0	3	40	60	100	
-	Professional Elective-3	PEC	3	0	0	3	40	60	100	
-	Professional Elective-4	PEC	3	0	0	3	40	60	100	
-	Open Elective-3	OEC	3	0	0	3	40	60	100	
		PRACTIC	AL	T	1					
U23CT717	Internet of Things Laboratory ^{\$}	PCC	3	0	2	1	60	40	100	
U23IT713	Internship Training	EEC	0	0	2	2	100	-	100	
U23IT714	Project Phase –I	EEC	0	0	4	2	60	40	100	
					Total	20	480	420	900	

CA - Continuous Assessment, ESE - End Semester Examination, PCC – Professional Core Courses, EEC-Employability Enhancement Courses, PROJ-IT-Project, CA- Continuous Assessment, ESE - End Semester Examination, CTC –Career Track Course

*Common to CSE & IT

^{\$} Common for CSE, IT & CST

	VIVEKANANDH (Autonomous Ela	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode– 637205									
Programme	B.E. / B. Tech.	Pı	rogramme Co	ode	104		Regulation			2023	
Department	INFORMATION TECHNOLOGY					Semester VIII				I	
(Ap	CURRICULUM (Applicable to the students admitted from the academic year 2023-2024 onwards)										
Course	Course Nat	Course Name		Per	riods/V	Veek	Credit	Ma	ximum	Marks	
Code			Category	L	Т	Р	C	CA	ESE	Total	
			THEOR	Y	1	1	1	T	1	r	
-	Professional Elect	ive-5	PEC	3	0	0	3	40	60	100	
-	Professional Elect	ive-6	PEC	3	0	0	3	40	60	100	
			PRACTIC	AL		1			-		
U23IT815	Project Phase - II		EEC	0	0	16	8	60	40	100	
						Total	14	140	160	300	

Cumulative Credits: 160

CA - Continuous Assessment, ESE - End Semester Examination, , PCC – Professional Core Courses, EEC-Employability Enhancement Courses, PROJ-IT-Project.

Type of Courses

:	Professional Core Courses
:	Professional Elective Courses
:	Open Elective Courses
:	Employability Enhancement Course
:	Mandatory Courses
:	Humanities And Sciences Courses
:	Engineering Sciences Courses
:	Basic Sciences Courses
:	Career Track Courses
	· · · · · · · · · · · · · · · · · · ·

		Career Track (Courses									
Sem	Course Code	Course Name	Category	Per	iods/	Week	Credit	Ma Ma	aximur arks	n		
	Coue		curegory	L	Т	Р	С	CA	ESE	Total		
		Track 1 - En	trepreneui	ship					•	•		
IV	U23CTCE1	Entrepreneurial Mindset and Business Model Canvas	EEC	-	-	2	1	60	40	100		
V	U23CTCE2	Product Innovation, Commercialization and Finance	EEC	2	-	-	1	40	60	100		
VI	U23CTCE3	Intellectual Property Rights	EEC	2	-	-	1	40	60	100		
Track 2 - Competitive Examination												
IV	U23CTCP3	Verbal , Quantitative Aptitude and Reasoning -II	EEC	2	-	-	1	40	60	100		
V	U23CTCG1	History & Culture of India and Indian Geography	EEC	2	-	-	1	40	60	100		
VI	U23CTCG2	Indian economy and Freedom struggle in India & Tamil Nadu	EEC	2	-	-	1	40	60	100		
		Track 3 - Hi	gher Studi	es								
IV	U23CTCP3	Verbal, Quantitative Aptitude and Reasoning -II	EEC	2	-	-	1	40	60	100		
V	U23CTCH1	Higher Studies in Abroad & India	EEC	2	-	-	1	40	60	100		
VI	U23CTCH2	Social Networking for Higher Studies	EEC	2	-	-	1	40	60	100		
		Track 4 - 1	Placement									
IV	U23CTCP3	Verbal , Quantitative Aptitude and Reasoning -II	EEC	2	-	-	1	40	60	100		
V	U23CTCP4	Leveraging Arithmetic and Codes Snippet	EEC	2	-	-	1	40	60	100		
VI	U23CTCP5	Integrated Reasoning and Pseudo Code	EEC	2	-	-	1	40	60	100		

	CATIO	NAL I		
A	1	\$		
ADA	0	*	3)	5
Y	1	V	13	1
	1	1992 *	HB.	1
	A NAME AND A	C		

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205



Prog	gramme	ŀ	B.TECI	ECHProgramme Code104Regulation2023													
Dep	artment	INF	FORM	ATION	N TECH	INOL	OGY					S	emest	er		Ι	
Course	Coda		Cor	irco No	mo	Р	eriods	Per	Week	C	redit		Max	2023on2023erIESETot 60 10 60 10engineers fors is needed inKing multipleKnowledge leveK3K4K5K5K5K3PSOsPSOsPSOsPSOs2222222222222222	ks		
Course	Code		Cot	iise ma	inte		L	Т	Р		С		CA	E	SE	Tota	ıl
U23M	A101	Ma	trices	and C	alculu	s*	3	1	0		4		40	6	0	100)
Course Objectiv	ve	The	 Main Objective of the course is to Develop the use of matrix algebra techniques that is needed by engineers for practical applications Familiarize the students with differential calculus Familiarize the student with functions of several variables. This is needed in many branches of engineering Make the students understand various techniques of integration Acquaint the student with mathematical tools needed in evaluating multiple integrals and their applications 														
		At t	he end	of the	course t	he stud	lents w	ill be	e able	to				Knov	wledg	e level	1
		CO	1: Use t	the mat	rix algeb	ora met	hods fo	or sol	ving p	racti	cal pro	oblem	5		K	3	<u> </u>
Course		CO	2: App	ly diffe	erential	calculu	is tools	in	solvin	g va	rious	applic	ation		K	1	
Outcom	0	prot	olems												IX	т	
Outcom	e	CO3	B: Able	to use o	lifferent	ial calc	ulus id	eas o	n seve	eral v	ariable	e func	tions		K	ζ5	
		CO4 prot	4: App olems	oly dif	ferent r	nethods	s of i	ntegr	ation	in s	solving	g pra	ctical		K	5	
		CO: prac	5: Appl tical pr	ly mult oblems	iple inte	gral ide	eas in s	olvir	ng area	as, vo	olume	s and	other		K3		
Pre-req	uisites	-															
					CO/PC) Mapp	oing							CO/I	PSO		
	(3/2	/1 indic	cates str	ength o	f correlat	tion) 3-	Strong,	2 - N	Aediur	n, 1 -	Weak	:		Мар	ping		
COs					Program	me Out	comes	(POs))					PSOs	5		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO	8 P	09	РО	PO	РО	PSO	PSO	PSC	0
<u>CO 1</u>	2	2		1	1						10	11	12	1	2	3	_
CO 1	3	2	2	1	1			+				+		$\frac{2}{2}$			—
CO 2	3	5	2	1	1			+			<u> </u>			2			
CO 4	3	2	2	1	1									2			
CO 5	3	4	1	1	1			+				+		2			
	5		-	-	-		I	1			L	<u> </u>	I	-	L		
Course A	Assessm	ent M	ethods														
Direct																	
1.	Contin	uous A	ssessm	ent Tes	t I, II &	III											
2.	Assign	ment.															
3.	End-Se	mester	exami	nations													
T . 1º																	

Indirect

Content of the sy	llabus
Unit – I	MATRICES

9+3

Characteria Eigenvector quadratic f in encodin	stic equation – Eigen values and Eigenvectors of a real matrix- ors – Cayley-Hamilton theorem(excluding proof) – Diagonalization form to canonical form by orthogonal transformation – Nature of quing g message using 2×2 matrix.	- Properties of ion of matrices adratic forms.	Eigen values and s – Reduction of a Simple application
Unit -	II DIFFERENTIAL CALCULUS	Periods	9+3
Limit, Con	ntinuity, Differentiability, Rules of differentiation, Differentiati	on of various	functions, Rolle's
theorem (e	excluding proof), Mean value theorem(excluding proof), Taylor's th	neorem(excludi	ing proof), Maxima
and Minim	na. Applications: Newton's law of cooling – Heat flow problems.	1	
Unit –	III FUNCTIONS OF SEVERAL VARIABLES	Periods	9+3
Partial diff Change of two variab method of	rerentiation – Homogeneous functions and Euler's theorem(exclu variables – Jacobians – Partial differentiation of implicit functions les(excluding proof) – Maxima and minima of functions of two va undetermined multipliers.	ading proof) – s – Taylor's ser ariables. Applic	Total derivative – ries for functions of cations: Lagrange's
Unit - I	IV INTEGRAL CALCULUS	Periods	9+3
Definite a	nd Indefinite Integrals- Methods of integration: Integration by	parts, Trigo	nometric integrals,
Trigonome	etric substitutions, Integration of rational functions by partial f	fraction, Integr	ration of irrational
functions -	Reduction formula on $\int_{0}^{\frac{\pi}{2}} \cos^{n} x dx$, $\int_{0}^{\frac{\pi}{2}} \sin^{n} x dx$.		
Unit -	V MUTIPLE INTEGRALS	Periods	9+3
Double int	tegrals – Change of order of integration – Double integrals in pola	m acondinatas	. 1 11
plane curv	es – Triple integrals – Volume of solids – Change of variables in d	louble and trip	- Area enclosed by le integrals.
plane curv	es – Triple integrals – Volume of solids – Change of variables in d	louble and trip	- Area enclosed by le integrals. 45+15=60
plane curv Text Book	es – Triple integrals – Volume of solids – Change of variables in d	louble and tripl	- Area enclosed by le integrals. 45+15=60
Text Book	es – Triple integrals – Volume of solids – Change of variables in d ss Stewart, J. , "Calculus: Early Transcendentals", Cengage Learnin	It cooldinates - louble and tripl Total Periods ng, 8 th Edition,	Area enclosed by le integrals. 45+15=60 2015
Text Book	 Stewart, J. , "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 	ng, 8 th Edition,	Area enclosed by le integrals. 45+15=60 2015 hi, 45 th Edition,
Text Book 1. 2. Reference	 Stewart, J., "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 	Total Periods	Area enclosed by le integrals. 45+15=60 2015 hi, 45 th Edition,
Text Book 1. 2. Reference 1.	 Stewart, J. , "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 Kreyszig E, "Advanced Engineering Mathematics", John Wiley, Kana Kana Kana Kana Kana Kana Kana Kan	ng, 8 th Edition, shers, New Del	Area enclosed by le integrals. 45+15=60 2015 hi, 45 th Edition, 2015)
Text Book 1. 2. Reference 1. 2.	 Stewart, J., "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 Kreyszig E, "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering M 	ng, 8 th Edition, shers, New Del , 10 th Edition (2 Iathematics", F	- Area enclosed by le integrals. 45+15=60 2015 hi, 45 th Edition, 2015) Firewall Media (An
Double interplane curve Text Book 1. 2. Reference 1. 2. 3.	 Stewart, J., "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 Stewart, J., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", The Mathematics of Mathematics (Mathematics), The Mathematics (Mathematics), New Delhi, 7th Edi Thomas. G. B., Hass. J, and Weir. M.D, "Thomas Calculus", 14 	ng, 8 th Edition, shers, New Del , 10 th Edition (1 lathematics", F tion, 2009	- Area enclosed by le integrals. 45+15=60 2015 2015 2015) Firewall Media (An urson India, 2018
Double interplane curve Text Book 1. 2. Reference 1. 2. 3. 4.	 Stewart, J., "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 Stewart, J., "Odvanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", The Bali. 7, Songal. M. and Watkins. C., "Advanced Engineering Mathematics", The Bali. 7, The Bali. 7, Songal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", The Bali. 7, Songal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, New Delhi, 7th Edi Thomas. G. B., Hass. J, and Weir. M.D, "Thomas Calculus", 14 Anton H, "Calculus", 10th Edition, Wiley (2016). 	ng, 8 th Edition, shers, New Del , 10 th Edition (2 lathematics", F tion, 2009 th Edition, Pea	 Area enclosed by le integrals. 45+15=60 2015 hi, 45th Edition, 2015) Firewall Media (An urson India, 2018)
Double interplane curve Text Book 1. 2. Reference 1. 2. 3. 4. 5.	 Section of the product of integration "Double integrals in poly es – Triple integrals – Volume of solids – Change of variables in des – Triple integrals – Volume of solids – Change of variables in des – Stewart, J., "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 Ses Kreyszig E, "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering M imprint of Lakshmi Publications Pvt., Ltd.,), New Delhi, 7th Edi Thomas. G. B., Hass. J, and Weir. M.D, "Thomas Calculus ", 14 Anton H, "Calculus", 10th Edition, Wiley (2016). B V Ramana, "Higher Engineering Mathematics", Tata McGraw Delhi (2016) 	Total Periods Total Periods ng, 8 th Edition, shers, New Del , 10 th Edition (2 Iathematics", F tion, 2009 th Edition, Pea	Area enclosed by le integrals. 45+15=60 2015 2015 2015) Firewall Media (An arson India, 2018 n Pvt Ltd., New
Double interplane curve Text Book 1. 2. Reference 1. 2. 3. 4. 5. E-Resource	 Stewart, J., "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 Stewart, J., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", The Engineering Mathematics of Lakshmi Publications Pvt., Ltd.,), New Delhi, 7th Edi Thomas. G. B., Hass. J, and Weir. M.D, "Thomas Calculus ", 14 Anton H, "Calculus", 10th Edition, Wiley (2016). B V Ramana, "Higher Engineering Mathematics", Tata McGraw Delhi (2016) 	Total Periods Ing, 8 th Edition, Shers, New Del , 10 th Edition (1 Iathematics", F tion, 2009 th Edition, Pea	Area enclosed by le integrals. 45+15=60 2015 hi, 45 th Edition, 2015) Firewall Media (An urson India, 2018 n Pvt Ltd., New
Double interplane curve Text Book 1. 2. Reference 1. 2. 3. 4. 5. E-Resource 1.	 Section of the product of integration "Double integrals in poly des – Triple integrals – Volume of solids – Change of variables in des – Triple integrals – Volume of solids – Change of variables in des – Stewart, J. , "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 Ss Kreyszig E, "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering M imprint of Lakshmi Publications Pvt., Ltd.,), New Delhi, 7th Edi Thomas. G. B., Hass. J, and Weir. M.D, "Thomas Calculus ", 14 Anton H, "Calculus", 10th Edition, Wiley (2016). B V Ramana, "Higher Engineering Mathematics", Tata McGraw Delhi (2016) es https://freevideolectures.com > All Courses > Calculus > UCLA 	Total Periods Ing, 8 th Edition, shers, New Del , 10 th Edition (2 Iathematics", F tion, 2009 th Edition, Pea	 Area enclosed by le integrals. 45+15=60 2015 2015) Firewall Media (An errson India, 2018 n Pvt Ltd., New
Double interplane curve Text Book 1. 2. Reference 1. 2. 3. 4. 5. E-Resource 1. 2.	 Section of the product of integration "Double integrals in pole of solids – Triple integrals – Volume of solids – Change of variables in des – Triple integrals – Volume of solids – Change of variables in des – Stewart, J. , "Calculus: Early Transcendentals", Cengage Learnin Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024 Ses Kreyszig E, "Advanced Engineering Mathematics", John Wiley, Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering M imprint of Lakshmi Publications Pvt., Ltd.,), New Delhi, 7th Edi Thomas. G. B., Hass. J, and Weir. M.D, "Thomas Calculus ", 14 Anton H, "Calculus", 10th Edition, Wiley (2016). B V Ramana, "Higher Engineering Mathematics", Tata McGraw Delhi (2016) es https://freevideolectures.com > All Courses > Calculus > UCLA www.learnerstv.com/Free-engineering-Video-lectures 	Total Periods Ing, 8 th Edition, Shers, New Del , 10 th Edition (2) Iathematics", F tion, 2009 th Edition, Pea	 Area enclosed by le integrals. 45+15=60 2015 2015) Firewall Media (An errson India, 2018 n Pvt Ltd., New

	and the second se	VI	VEKA (Au	NAND itonomo	HA CC ous Instit Elayam	DLLE tution, ipalaya	GE O Affilia m, Tir	F EN ted to ucheng	I GIN Ann gode	NEEH a Uni – 637	RING versit 7 205	FOR y, Chei	R WOM nnai)	EN	TÜVRheinia	ISC 0301:2015	
Progra	mme	B.Te	ch.				Prog	amm	ne C	ode	1	04	Regul	ation		2023	
Depart	tment	INFC	ORMA'	TION	FECH	NOLC	OGY						Sem	nester		Ι	
Course C	ode		Cou	rse Na	me		Pe	eriods Wee	s Pe -k	r	Cr	edit		Maxi	mum N	larks	
							L		Γ	Р	(С	CA	4	ESE	Total	
U23EN1	01	Eng	lish fo	r			3	()	0		3	40)	60	100	
		Com	imuni	catio	1*												
		The 1	nain o	bjectiv	e of th	is cou	irse is	to:									
Course		•	Imp	orove t	he con	nmun	icativ	e abi	lity	of le	arne	rs.					
Objective		•	Make learners read widely in order to practice writing														
		•	• Make learners develop vocabulary and strengthen grammatical understanding														
		•	 Assist students in the development of intellectual flexibility, creativity, and cultural 														
			lite	racy so	b that t	hey m	nay er	igage	in l	life-l	ong	learni	ng.	•	•		
		•	Ide	ntify a	nd beg	in to	apply	the l	ang	uage	feat	ures c	of acade	mic ar	nd profe	essional	
			wri	ting ar	nd spea	ıking			-						-		
Course	e	At th	e end o	of the o	course,	the s	tuden	t sho	uld	be al	ole to	Э,				Knowledg	ge
Outcon	ne															Level	
		CO1	: Use a	approp	riate v	ocabu	lary i	n a p	rofe	ssio	nal c	ontex	t			K1	
		CO2	: Write	e appro	opriate	ly ba	sed of	n the	kno	wlee	lge g	gained	l throug	h read	ing of	K1	
		a var	iety of	mater	ials					1	<u> </u>	•.•					
		CO3	: Use I	angua	ge thro	ugh t	heir g	ramn	nati	cal a	cqui	sition				K2	
		CO4	: Read	and ir	ifer me	eaning	gs of t	echn	ıcal	texts	5					K2 K2	
		CO5	: Com	prehen	d and	retain	the c	ontex	xtua	l and	l syn	tax ur	nderstar	iding f	rom	КJ	
		read	ng														
Pre-requis	sites :N	lil															
	(2)	/1 • 1•		.1	CO / 1	PO M	appir	g	•			1 337			C	O/PSO	
Cos	(3/2		cates su	rength	Prog	ramm) 3-80 e Outo	ong,	$\frac{Z-1}{2}$	$\frac{1}{2}$	um,	1 - we	ак		IVI	apping PSOs	
0.03	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6)	PO 8) F	909	PO 10	PO 11	PO 12	PSO	1 PSO 2	
CO 1		_				2			0		3	3		3		1	
CO 2						2					3	3		3		1	
CO 3						2					3	3		3		1	
<u>CO 4</u>						2					3	3		3		1	
		nt Mo	thada			Z					3	3		3		1	
Course As	sessine	III Me	inous														
Direct																	
1. C	ontinu	ous As	sessme	ent Tes	t I, II &	z III											
2. A	ssignn	nent															
3. E	nd-Sen	nester	examin	ations													
	ourse	and a	ITVAN														
	ourse -	· chù si	лүсу														
Content of	the sy	llabus															

Unit – I Periods	9
Listening-Introduction to Different Types of Listening, Listening to Casual Conve	rsations, Speaking-
Introduction to develop the Art of Speaking, Giving Self Introduction, Reading-Underst	anding the Basics of
Reading Skills, Reading Instructions and Technical Manuals, Writing- Introduction to	o writing strategies.
Writing Definitions, Focus on Language Technical terms (Jargon), Word Formatio	n with Prefixes and
Suffixes, Using Active Voice and Passive Voice, Basic sentence patterns, Tenses (past,	present, perfect and
continuous tenses).	•
Unit – II Periods	9
Listening- Listening to lectures, listening to description of equipment, Speaking- Strate	gies for Developing
Conversational Skills, Short Conversations through Role Play Activities, Reading-Read	ing Comprehension,
Reading e-mails, Reading Headlines, Predicting the Content, Writing- Note making, W	/riting Descriptions,
Focus on Language–Collocations, One word substitution, Subject - verb agreement	
Unit – III Periods	9
Listening- Listening to different kinds of interviews (Face - to - face, radio, TV and te	lephone interviews),
Speaking-Describing an Object, Asking Questions, Participating in Discussions Reading	- Intensive reading,
Reading passages for gist. Writing- Writing short& lengthy e-mails with emphasis	on Brevity, Clarity,
Coherence and Cohesion), Focus on Language–Sequential Connectives, Impersonal Pass	ive
Unit – IV Periods	9
Listening-Note Taking Sneaking- Improving Fluency through Narration Reading-R	eading passages for
specific information. Phone messages Reading and Transferring Information Writin	p - Effective writing
strategies Informal writing Writing a Memo Focus on Language- Cause and Effect Co	nditional Statements
(if - clauses and types) Usage of Modal Verbs	national Statements
Unit _ V Periods	Q
Listening Listening to understand Modulation Listening to Welcome Speeches Su	pelivering
Welcome Address Understanding Segmental and Supra segmental Features Practicing	strass Dause and
Internation Beading Reading for a purpose Reading Business Documents Interpreting	Charts and Graphs
Writing Describing a Process Focus on Language Synonyms and Antonyms Common	Errors in English
Total Periods	45
Text Books	
1 Dr S R Kannan & Faculty from the Department of English -English for Com	munication Karun
Printers Pyt 1 td 2023	munication, Karun
2 Sokkaalingam S RM. The Art Of Speaking English Versatile Publishing Hou	ise 2019
References	150, 2017.
1 Dr. Padma Ravindran, Poorvadevi, M. V. Abdur Razack- English for life, Eng	lish for work
students Book Ebek language laboratory pyt ltd 2011	lish for work,
2 Dutt Beigeven Brekech A Course in Communication Skill (Anne University)	Coimbatora
2. Duit Rajeevan, Flakasii. A Course in Communication Skin (Anna Oniversity, adition): Combridge University Press India Dut Ltd. 2007	Joinibatore
2 C.D. Dhanarad, English and Communication Shills for Stadards of Spinnes and	Encircular Onicat
3. S.P. Dhanavel, English and Communication Skills for Students of Science and	Engineering, Orient
Blackswan Pvt, Ltd, 2009.	
4. Technical English – I & II, Sonaversity, Sona College of Technology, Salem, J	first Edition, 2012.
5. Meenakshmi Raman and Sangeeta Sharma- 'Technical communication English	Skills for Engineers;
oxford University Press, 2008.	
E-Resources	
1. <u>http://www.sparknotes.com/lit/the-alchemist/summary.html</u>	
2. <u>https://www.stephencovey.com/7habits/7habits.php</u>	

		VIN	EKA (Auto)	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205Image: Cole of the cole of th											ISO 50012015	
Prog	gramme	B.T	ech.		Pr	ogra	mme C	ode		104		Regu	lation		2023	
Depa	artment	Info	rmatio	on Tecł	nnology							Sen	nester		Ι	
Course	Code		Cou	rse Nai	me	Pe	eriods I	Per Wo	eek P	Cre	edit C	C	Maxiı A	num M ESE	arks Total	
U23PI	H101	Eng	ineeri	ng Ph	ysics ^{\$}		3	D C	0	3	3	40)	60	100	
Course Objectiv	7 e	The • Ur • Ga • Ida pro • Co in • Ca	 The student should be made to, Understand the basic concepts of properties of matter Gain knowledge about the conduction properties of metals Identify the different types of crystal structures and crystal growth techniques. Study the production and applications of ultrasonics. Correlate better understanding the carrier concentration and its variations with temperature in a semiconductor. Study the properties of modern engineering materials and its uses Categorize the types of laser and fiber optics 													
		At the end of the course, the student will be able to Knowledge Level											owledge el			
		•	• Un	derstan	d the elas	tic p	ropertie	es of the	ne m	ateri	als				K2	
Course		•	Gai	in knov	vledge ab	out tl	he conc	luction	n pro	operti	ies of	metals	5		K3	
Outcom	e	•	 Det diff me 	termine ferent t dical aj	e packing ypes of cr oplication	facto ystal s.	or for va imper	arious fection	unit is an	cells rd lea	s and arn the	unders e engir	tand leering	,	K1	
		•	Dis Dis	scuss th	e basic id f modern	lea of engi	f semic neering	onduc mate	ting rials	mate	erials	and rea	alize th	e	K1	
		•	Lea	arn the	optical pr	oper	ties of 1	nateri	als a	nd it	s uses	s			K3	
Pre-requ	uisites															
	110-104misines														0.0	
		CO / PO Mapping CO/PSO												50		
	(3/2/1	indicat	es stre	noth of	CO / PO	nn) 3	-Strong	1/2/1 indicates strength of correlation) 3-Strong, 2 – Medium, 1 - Weak								
COs	(3/2/1	indicat	es stre	ngth of F	CO / PO correlation rogramm	$\frac{1}{2}$ on) 3	-Strong	g, 2-2 (POs	Med	ium,	1 - W	/eak		Mapp PSOs	oing	
COs	(3/2/1 PO 1	indicat	PO 3	ngth of F PO 4	CO / PO correlatio Programm	on) 3 ie Ou PO 6	-Strong tcomes PO 7	$\frac{1}{2}, 2 - \frac{1}{2}$	Med	ium, 09	1 - W	/eak	РО	Mapp PSOs PSO1	PSO 2	
COs	(3/2/1 PO 1	indicat PO 2	PO 3	ngth of F PO 4	CO / PO correlation Programm PO 5 F	on) 3 ie Ou PO 6	-Strong itcomes PO 7	$\begin{array}{c} g, 2 - 2 \\ \hline g \\ (POs \\ PO \\ \end{array}$	Med) 6 P	ium, 09	1 - W PO10	/eak PO 11	PO 12	Mapp PSOs PSO1	PSO 2	
COs CO1	(3/2/1 PO 1 3	PO 2	PO 3	ngth of F PO 4	CO / PO correlation Programm PO 5 F 2	on) 3 ie Ou PO 6	-Strong tcomes PO 7	g, 2 – 2 6 (POs PO 8	Med) 6 P0	ium, 09	1 - W PO1(Veak PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2	
COs CO 1 CO 2 CO 3	(3/2/1 PO 1 3 3 3	PO 2 2 2 3	PO 3 3 3	ngth of F PO 4	CO / PO correlation Programm PO 5 1	Nap on) <u>3</u> ie Ou PO 6	-Strong itcomes PO 7	g, 2 – 2 (POs PO 8	Med) B P0	ium, 09	1 - W PO1(Veak PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2	
COs CO1 CO2 CO3 CO4	(3/2/1) PO 1 3 3 3 3 3	PO 2 2 2 3	PO 3 3 3 2	ngth of F PO 4	Programm PO 5 P 2 1 1 1	Via p on) 3 ie Ou PO 6	-Strong tcomes PO 7	g, 2 – 2 (POs PO 8	Med) P	<u>ium,</u> 09	1 - W PO1(/eak PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO1 CO2 CO3 CO4 CO5	(3/2/1 PO 1 3 3 3 3 3 3	PO 2 2 2 3	PO 3 3 3 2	ngth of F PO 4	CO / POF correlationProgrammedPO 5PO 511122<	Via p on) 3 ie Ou PO 6	PO 7	g, 2 – 2 (POs PO 8	Med) P	ium, 09	<u>1 - W</u> PO1(/eak PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO 1 CO 2 CO 3 CO 4 CO 5 Course 4	(3/2/1 PO 1 3 3 3 3 3 3 Assessm	PO 2 2 2 3 ment M	PO 3 3 3 2 (ethods	ngth of F PO 4 1 3 3 1 1 5	$\begin{array}{c c} \mathbf{CO} & \mathbf{PO} \\ \hline \mathbf{CO} & \mathbf{rogramm} \\ \hline \mathbf{Po 5} & \mathbf{F} \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ 1 \\ \hline \\ 1 \\ \hline \\ 2 \\ 2 \\ \end{array}$	PO 6	PO 7	g, 2 – 2 a (POs PO 8	Med) B P	ium, 09	1 - W	/eak	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO1 CO2 CO3 CO4 CO5 Course 2 Direct	(3/2/1 PO 1 3 3 3 3 3 3 Assessm	PO 2 2 2 3 eent M	PO 3 3 3 2 (ethods	ngth of F PO 4 1 3 3 1 1 5	CO / PO \hat{r} correlation \hat{r} or \hat{r} or \hat{r} \hat{r} or \hat{r} <t< td=""><td>PO 6</td><td>PO 7</td><td>g, 2 – 2 3 (POs PO 8</td><td>Med P</td><td>ium, 09</td><td>1 - W</td><td>/eak PO 11</td><td>PO 12</td><td>Mapp PSOs PSO1</td><td>PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2</td></t<>	PO 6	PO 7	g, 2 – 2 3 (POs PO 8	Med P	ium, 09	1 - W	/eak PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO 1 CO 2 CO 3 CO 4 CO 5 Course 4 Direct	(3/2/1 PO 1 3 3 3 3 4 ssessm 1. Cont	PO 2 2 2 3 ment M	PO 3 3 3 2 (ethods) 5 Assess	ngth of F PO 4 1 3 3 1 1 1 5 s	Programm PO 5 F 2 1 1 2 2 2 1 1 2 2 1 1 2 2 1 1 1 1 2 2 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 Test I, II 1	Wiap on) 3 ie Ou PO 6	PO 7	g, 2 - 3 (POs PO 8	Med) P	ium, 09	1 - W	PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO1 CO2 CO3 CO4 CO5 Course A Direct	(3/2/1 PO 1 3 3 3 3 3 Assessm 1. Com 2. Assi	PO 2 2 2 3 ent M tinuous gnmen	PO 3 3 3 2 (ethods) s Assests and	ngth of F PO 4 1 3 3 1 1 5 s s s s ment Mind n	Programm Programm PO 5 F 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Wiapon) 3 ie Ou PO 6	PO 7	g, 2 - 2 (POs PO 8	Med)	ium, 09	1 - W	/eak PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO1 CO2 CO3 CO4 CO5 Course A Direct	(3/2/1 PO 1 3 3 3 3 3 3 3 4 ssessm 1. Cont 2. Assig 3. End-	PO 2 2 2 3 eent M tinuous gnmen Semes	PO 3 3 3 2 (ethods) ts Assess ts and ter exa	ngth of F PO 4 1 3 3 1 1 1 5 S S S S S S Mind n I I I S	PO 5 F 2 1 1 2 2 2 1 2 2 2 1 1 1	William initial	PO 7	g, 2 - 2 g, (POs PO 8	Med)	ium, 09	<u>1 - W</u>	PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO 1 CO 2 CO 3 CO 4 CO 5 Course 4 Direct	(3/2/1 PO 1 3 3 3 3 3 3 Assessm 1. Cont 2. Assig 3. End- t	PO 2 2 2 3 Pent M tinuous gnmen Semes	PO 3 3 3 2 2 5 Assests and ter exa	ngth of F PO 4 1 3 3 1 1 1 5 S S S S S S S S Mind n S	Programm Programm PO 5 H 2 1 1 2 2 2 1 1 1 2 2 2 1 1<	William initial	PO 7	g, 2 - 3 (POs PO 8	Med)	ium, 09	<u>1 - W</u>	PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO1 CO2 CO3 CO4 CO5 Course A Direct Indirect	(3/2/1 PO 1 3 3 3 3 3 3 3 Assessm 1. Cont 2. Assig 3. End- t 1. Court of the c	PO 2 2 2 3 ent M tinuous gnmen Semes rse - en	PO 3 3 3 2 (ethods ts and ter exa d surve	ngth of F PO 4 1 3 3 1 1 5 s s s s s s ment Mind n mination ey	PO 5 F 2 1 1 2 1 2 2 2 1 1 1 2 2 1	William Image: second secon	PO 7	g, 2 - 3 (POs PO 8	Med)	ium, 09	<u>1 - W</u>	/eak PO 11	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
COs CO 1 CO 2 CO 3 CO 4 CO 5 Course 4 Direct Indirect	(3/2/1 PO 1 3 3 3 3 3 3 3 3 3 3 Assessm 1. Cont 2. Assig 3. End- t 1. Cour of the s - I	PO 2 2 2 3 PO 2 2 3 Po 2 2 3 Po 2 2 3 Po 2 2 3 Po 2 2 3 Po 2 2 3 Po 2 2 3 Po 2 2 3 Po 2 2 3 Po 2 Po	PO 3 3 3 2 2 (ethods) 5 Assests and ter exa d surversions	ngth of F PO 4 1 3 3 1 1 1 s s s s s s ment Mind n uminatio	CO / PO F correlation Programm PO 5 I 1 1 2 1 2 2 1 1 2 2 1 1 2 2 Test I, II nap ons	king on a start of the start of	F MAT	g, 2 - 2 (POs PO 8 	Med	ium, 09	1 - W	PO 11 	PO 12	Mapp PSOs PSO1	PSO 2 2 2 2 2 2 2 2 2 2 2 9	
COs CO 1 CO 2 CO 3 CO 4 CO 5 Course 4 Direct Indirect Content Unit Elasticit	(3/2/1 PO 1 3 3 3 3 3 3 3 4 ssessm 1. Cont 2. Assi 3. End- t 1. Cour of the s - I y: Type	PO 2 2 2 3 ent M tinuous gnmen Semes see - en yllabu s of m	PO 3 3 3 2 2 4 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5	ngth of F PO 4 1 3 3 1 1 5 S S S S S S S S S S S S S	PO 5 F 2 1 1 2 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 2 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	King Point Section 1997	F MAT n's rat	g, 2 - 3 (POs PO 8 	Med) F P(ium, 09	<u>1 - W</u> PO1(Veak	PO 12 	Mapp PSOs PSO1	ing PSO 2 3	
COs CO 1 CO 2 CO 3 CO 4 CO 5 Course 4 Direct Indirect Indirect Content Unit Elasticit Young's	(3/2/1 PO 1 3 3 3 3 3 3 3 Assessm 1. Cont 2. Assig 3. End- t 1. Cour of the s - I y: Type modulu	PO 2 2 2 3 ent M tinuous gnmen Semes se - en yllabu s of m us: Un	PO 3 3 3 2 2 (ethods ts and ter exa d surve is noduli iform	ngth of F PO 4 1 3 3 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5	Programm PO 5 F 2 1 1 2 2 2 1 1 2 2 2 7 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	& III S OH	F MAT n's rat	g, 2 – 2 (POs PO 8 TER io - S rimen	Med) B P(ium, 09	1 - W	Veak	PO 12	Mapp PSOs PSO1 3 3	ing PSO 2 3 3 2 3 3 3 3 3 3 3 3 3 3	

-											
Viscosity:	Co-efficient of viscosity - Poiseuilles' formula - Experimental dete	ermination – u	ses.								
Unit -	II ELECTRICAL PROPERTIES OF METALS	Periods	9								
Classical t Conductiv Quantum equations	heory: Classical free electron theory of metals- Expressions for el ty of metals – Wiedemann-Franz law (Qualitative) - Success and : theory: de Broglie's hypothesis - Schrodinger's time indepen Fermi – Dirac Statistics - Density of energy states (Qualitative).	ectrical conduction failures. Indent and time	ctivity and Thermal e dependent wave								
Unit –	II CRYSTAL PHYSICS AND ULTRASONICS	Periods	9								
Crystallog spacing in Packing Fa Ultrasonic Oscillator (NDT) and	Crystallography: Unit cell - Crystal systems - Bravais lattices- Lattice planes - Miller indices - Inter-planar spacing in cubic lattice- Calculation of number of atoms per unit cell- Atomic radius – Coordination number-Packing Factor for HCP structures - Crystal defects – point and line defects (qualitative). Ultrasonics: Introduction - Properties and Generation of Ultrasonics – Magnetostriction and Piezoelectric Oscillator methods – Applications: Sonogram. Semiconducting & MODERN ENGINEERING										
Unit - I	V SEMICONDUCTING & MODERN ENGINEERING MATERIALS	Periods	9								
Semicond Carrier co semicondu level with Metallic g application	actors: Elemental and Compound semiconductors - Intrinsic seron oncentration – Fermi level – Electrical conductivity - Ban ctors: Carrier concentration in $n - type$ and $p - type$ semiconductor temperature. Application; Construction and working of LED. lasses: preparation, properties and applications - Shape memory a so of NiTi alloy.	niconductor: (d gap detern (Qualitative) – dloys (SMA):	Qualitative only) – nination. Extrinsic Variation of Fermi Characteristics and								
Unit –	V LASER AND FIBER OPTICS	Periods	9								
coefficient Optical fil (Qualitativ Temperatu	s. Types: CO ₂ laser - Semiconductor laser: Homo junction - Applie ber: Principle of propagation of light through optical fiber - Numer e) -Types of optical fibers -Fiber optical communication system re sensor.	cations. ical aperture an n (block diagr	ad acceptance angle am) - Application:								
Toyt Book		otal Periods	45								
1	R K. Gaur and Gunta, S.L. Engineering Physics, Dhannat Rai Publ	ishers 2017									
2	S O Pillai Solid state physics New Age International Private Lir	nited									
3.	A.Panneerselvam and Dr.P.Mani, "Engineering Physics", Dhana (2024)	m publisher, (Chennai – 600 042.								
Reference	S										
1.	B.K. Pandey, S. Chaturvedi. "Engineering Physics", 1 st Edition, (2012).	Cengage Lear	ning India Pvt Ltd,								
2.	David Halliday, Robert Resnick Jearl Walker, Fundamentals Of P , Wiley India Pvt Ltd, 2008.	hysics Extende	ed 8/Ed 8th Edition,								
3.	Lawrence H.Vanvlack, "Elements of materials Science En Publication.	gineering, 6 th	Edition, Pearson								
4.	S.O.Pillai, "Solid State Physics", New Age International Publish	ers									
5.	Dr.V.Rajendran, "Engineering Physics", Tata McGraw Hill Educ	cation Private I	Limited, New Delhi								
E-Resour	ees										
1.	www.e-booksdirectory.com										
2.											
	Home.iitk.ac.in										

C		VIVI (Auton	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University ,Chennai) Elayampalayam, Tiruchengode – 637 205									
Prog	ramme	B.E./B	.Tech.		Pro	ogramm	e Code	;	Regulation	n	2	023
Depa	artment	CSE, E	EE, EC	E, IT, BT,	CST &]	BME			Semeste	er		I
Course	Code		ourse l	Name	Perio	ds Per	Week	Credit	Max	kimum	Mar	`ks
		Due que		for	L	Т	Р	C	CA	ES	SE	Total
U23CS	5101	Progra Proble	mming n Solv	ing	3	0	0	3	40	6	0	100
Course Objectiv	e	The mathematics • Le sol	n objec arn the f ving ski	tive of this fundamenta lls in C Pro	course is ls of com grammin	to: puters, ig	langua	ges, numl	ber systems	and ac	quire	e problem
		At the e	nd of th	e course, th	e student	should	be abl	e to,			Kn	owledge Level
		CO1: E	xamine	number sys	stems and	l to app	ly prob	lem solvi	ng techniqu	es		K3
Course CO2: Learn the basics of C programming with branching and looping statements								-	K2			
Outcome	9	CO3: E applicat	xperime ions	ent the C pro	ograms u	sing A1	rays ar	d Pointer	s for simple	:	-	K3
		CO4: S	olve C p	orograms w	ith the Fu	unctions	s and S	trings			K3	
		CO5: A problem	pply St s	ructures, Ur	nion and	File coi	ncepts t	o solve si	imple real w	orld	-	K3
	CO/PO Mapping (3/2/1 indicates strength of correlation) 3-Strong, 2 – Medium, 1 - Weak Mapping											
COs				Program	nme Outc	omes (P	Os)				PSO	s
CO 1	PO 1 3	PO 2 PO 2 1	3 PO 4	PO 5 1	PO 6 PC	07 PO	8 PC	9 PO 10	PO 11 P	0 12	PSO1	PSO 2
CO 2	2									2		-
CO 3		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$									2	2
	3	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	2 2						2 2 2 2	2 3 3	2 3 3
CO 5	3 3 3	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1 1 1	2 2 2 2 2						2 2 2 2 2 2	3 2 3 3 3	2 3 3 3
	3 3 3	1 1 2 1 2 1 2 1 2 1	1 1 1	2 2 2 2 2						2 2 2 2 2	3 2 3 3 3	2 3 3 3
Course A Direct	3 3 3 3 3	1 1 2 1 2 1 2 1 2 1	1 1 1 ds	2 2 2 2						2 2 2 2 2	3 2 3 3 3	2 3 3 3
Course A Direct	3 3 3 ssessme	1 1 2 1 2 1 2 1 2 1 Assessment 1	ds	2 2 2 2 1, II & III						2 2 2 2 2	3 2 3 3 3	2 3 3 3
Course A Direct 1. Co 2. As	3 3 3 ssessme ntinuous signmen	1 1 2 1 2 1 2 1 2 1 2 1 a Assessm t / Quiz / y 1	1 1 ds ent Test Seminar	2 2 2 2 1, II & III						2 2 2 2 2	3 2 3 3 3	2 3 3 3
Course A Direct 1. Co 2. As 3. En	3 3 3 ssessme ntinuous signmen d-Semes	1 1 2 1 2 1 2 1 2 1 x 1	ds ent Test Seminar nation	2 2 2 2 1, II & III						2 2 2 2 2	3 3 3 3	2 3 3 3
Course A Direct 1. Co 2. As 3. En Indirect 1.	3 3 3 ssessme ntinuous signmen d-Semes t Course -	1 1 2 1 2 1 2 1 2 1 mt Methor Assessm t / Quiz / ter exami - end surv	ds ent Test Seminar nation	2 2 2 2 1, II & III						2 2 2 2 2	3 3 3	2 3 3 3
Course A Direct 1. Co 2. As 3. En Indirect 1.	3 3 3 sseessme ntinuous signmen d-Semes t Course -	1 1 2 1 2 1 2 1 a Assessm t Quiz / ter exami - end surv	1 1 ds ent Test Seminar nation	2 2 2 1, II & III						2 2 2 2 2	3 3 3 3	2 3 3 3
Course A Direct 1. Co 2. As 3. En Indirect 1. Content	3 3 3 ssessme ntinuous signmen d-Semes t Course -	1 1 2 1 2 1 2 1 2 1 a Assessm t / Quiz / 1 ter exami - end surv Ilabus	1 1 ds ent Test Seminar nation	2 2 2 1 1, II & III						2 2 2 2 2	3 3 3 3	
Course A Direct 1. Co 2. As 3. En Indirect 1. Content	3 3 3 ssessme ntinuous signmen d-Semes t Course - of the sy - I	1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 4 Assessment 4 Quiz / 4 end surv 1 1 1 1 1 1	1 1 ds ent Test Seminar nation ey RODU	2 2 2 1 1, II & III CTION TO	D PROB		OLVI	NG	Periods		3 3 3 3	2 3 3 3 9
Course A Direct 1. Co 2. As 3. En Indirect 1. Content of Unit Basic org – Algorit Number	3 3 3 3 assessme ntinuous signmen d-Semes t Course - of the sy – I ganizatio hm. Systems	1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 3 Assessment Ilabus INT n of Com s – Decim	1 1 1 ds ent Test Seminar nation ey RODU puter - 1 nal, Bina	2 2 2 1 1, II & III CTION TO Programmin ary, Octal a	D PROB ng langua nd Hexad	LEM S ages - C lecimal	OLVI ompile conver	NG Inter rs – Inter	Periods preter - Flov	2 2 2 2 2	3 3 3 3 - Ps	2 3 3 3 9 eudocode

Introduction Decision M	n to C – Features - Data Types – Constants – Variables - I/O Stat Jaking and Branching – Looping Statements - Break, Go to, Conti	ement - Opera nue.	tors –Expressions -								
Unit – l	II ARRAYS AND POINTERS	Periods	9								
Arrays: Co	oncepts - Need - one dimensional array - array declaration - fea	tures – array ii	nitialization - Two-								
Dimension	al Arrays- Multidimensional Arrays.										
Pointers: 1	ntroduction, pointer declaration-accessing variable through point	er- Pointers ar	nd Arrays, Pointers								
and strings	- Pointers structures - Pointer Arithmetic - Array of Pointers	- dynamic m	emory allocation -								
mallaoc, re	alloc, free.	•									
Unit - I	V FUNCTIONS AND STRINGS	Periods	9								
Functions	Introduction, function declaration, defining and accessing fun	nctions, User-	defined Functions-								
storage cla	sses-function prototypes-parameter passing methods-recursion.										
Strings: Co	oncepts – Strings manipulation - String Input / Output Functions- S	trings standard	l functions - Arrays								
of Strings.											
Unit –	V STRUCTURES, UNIONS AND FILE SYSTEMS	Periods	9								
Structures	: Introduction- nested structures- Arrays of Structures - Structures	ares and Func	tions - Pointers to								
Structures	– Unions.										
File: openi	ng, defining, closing, File Modes, File Types, Writing contents	into a file, Re	ading file contents,								
Appending	Appending an existing file, File permissions and rights, Changing permissions and rights.										
		Fotal Periods	45								
Text Book	S	1 (7) 11	a 1 i 1								
1.	S.Kuppuswami, S.Maliga, C. S. Kanimozhi and K.Kou Programming", Tata McGraw Hill, 2019.	salya, "Probl	em Solving and								
2.	E. Balagurusamy, "Programming in ANSI C", 8th Edition, Mc G	raw Hill, 2019									
Reference	5										
1.	Herbert Schildt, C: The Complete Reference, Mc Graw Hill, 4th	Edition, 2017									
2.	Kernighan BW and Ritchie DM, "The C Programming Langua India, 2017.	ge", 2 nd Editio	n, Prentice Hall of								
3	Dr.V.Rameshbabu, Dr.R.Samyutha, M.Muni Rathnan, "Compute	r Programming	g", VRB Publishers								
Э.	Pvt.Ltd, 2016.										
Tools Req	uired										
1.	Codetandra/HackerRank/ HackerEarth / Any online Problem Sol	ving Platforms	5								
E-Resourc	es										
1.	https://www.geeksforgeeks.org/c-language-set-1-introduction/										
2.	https://www.programiz.com/c-programming										
3.	https://www.cprogramming.com/										

	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution Affiliated to Anna University Chennai) Elayampalayam, Tiruchengode – 637 205									
Programme I	B.TECH Programme code	e	10	4 Re	gulation	L	20	23		
Department I	INFORMATION TECHNOLOGY			Seme	ster			Ι		
Course		Per	iods p	er week	Credit	Ma	aximum	Marks		
code	Course name	L	Т	Р	С	C A	ESE	Total		
U23TA101	Heritage of Tamils*	1	0	0	1	4 0	60	100		
Content of the syl										
<u> </u>	மொழி மற்றும் இலக்கியம		•	0.1	Periods	• •	3	0.		
இந்திய மொழிக்குடும்பங்கள் – திராவிடமொழிகள் – தமிழ் ஒரு செம்மொழி - தமிழ் செவ்விலக்கியங்கள் – சங்க இலக்கியத்தின் சமயச் சார்பற்றத்தன்மை – சங்க இலக்கியத்தில் பகிர்தல் அறம் திருக்குறளில் மேலாண்மைக்கருத்துக்கள் – தமிழ்க்காப்பியங்கள் – தமிழகத்தில் சமண பௌத்த சமயங்களின் தாக்கம் – பக்தி இலக்கியம்,ஆழ்வார்கள் மற்றும் நாயன்மார்கள் – சிற்றிலக்கியங்கள் – தமிழில் நவீன இலக்கியத்தின் வளர்ச்சி – தமிழ் இலக்கிய வளர்ச்சியில் பாரதியார் மற்றும் பாரதிதாசனின் பங்களிப்பு.										
அலகு 2 <mark>ല</mark>	மரபு – பாறை ஒவியங்கள் முதல் வரை –சிற்பக்கலை	ന് ഖീൽ	ர ஓவி	ியங்கள்	Periods		3			
அவர்கள் தட சுடுமண் சிற் இசைக்கருவி வாழ்வில் கோ	ாரிக்கும் கைவினைப்பொருட்கள பங்கள் – நாட்டுப்புறதெய்வங்கள கள் – மிருதங்கம், பறை,யாழ்,வீன ாவில்களின் பங்கு.	ள்,பெ ர் – கு ண,ந	ாம்னை தமரி(ாதஸ்	மகள் – மனையில வரம் – தட	தேர் தே ல் திருவ பிழர்கள	சட் சய் எஞ் ின்	பலார் க நவர் ச பொருஎ	லை – லல – 1லை – ராதார		
அலகு 3 👔	நாட்டுப்புறக்கலைகள் மற்றும் வீரவ	ிளை	யாட்(டக்கள்	Periods	5	3			
தெருக்கூத்து, ,தோல்பாவை	கரகாட்டம், வில்லுப்பா ககூத்து, சிலம்பாட்டம், வளரி, புலி	்ட்டு, பயாட்	ہ بے , فاے	கணியான் தமிழர்கள	ரகூத்து, ரின் விஎ	ளை	ஒயில பாட்டுச்	ாட்டம் கள்.		
ച്ചരു 4 പ്ര	தமிழர்களின் திணைக்கோட்ட	பாடு	கள்		Periods	5	3			
தமிழகத்தின் அகம் மற்று சங்ககாலத்தி துறைமுகங்க சோழர்களின்	தாவரங்களும் விலங்குகளும்– ெ பம் புறக்கோட்பாடுகள் – தமி ல் தமிழகத்தில் எழுத்தறிவு, எளும் – சங்ககாலத்தில் ஏற்றுமதி ப r வெற்றி.	தால் ழர்கள கல் மற்று	காப்பீ ள் ே வியறி ம் இற	ியம் மற் பாற்றிய 1வு – றக்குமதி	றும் சங் அறக் சங்ககா – கடல் ல	க இ கோ ஸ கடந்	லக்கிய ட்பாடுல நகரங் நத நாடு	பத்தில் கள் – பகளும் 1களில்		
அலகு 5 🔓	இந்திய தேசிய இயக்கம் பண்பாட்டிற்குத் தமிழர்களின் ப	மற்ற பங்கு	பம்	இந்திய	Periods	5	3			
இந்திய விடு தமிழ்ப்பண்ப சித்தமருத்து அச்சுவரலாறு	இந்திய விடுதலைப்போரில் தமிழர்களின் பங்கு – இந்தியாவின் பிறப்பகுதிகளில் தமிழ்ப்பண்பாட்டின் தாக்கம் – சுயமரியாதை இயக்கம் – இந்திய மருத்துவத்தில் சித்தமருத்துவத்தின் பங்கு – கல்வெட்டுகள் கையெழுத்துப்படிகள் – தமிழ்ப்புத்தகங்களின் அச்சுவரலாறு.									
				,	Total Peri	iods	1	5		

	VIVEKA (Au	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution Affiliated to Anna University Chennai) Elayampalayam, Tiruchengode – 637 205											
Programme	B.TECH	Programme cod	e	10)4	Regulation	ı	2023					
Department	INFORMATION TE	CHNOLOGY			S	emester	mester						
Course	Cou	rse name	Per	iods p	er week	Credit	Ma	aximum Marks					
code			L	Т	Р	С	CA	ESE	Total				
U23TA101	Heritage of Tan	nils*	1	0	0	1	40	60	100				
Content of the	syllabus												
UNIT I	LANGUAGE AND LITERATUREPeriods3												
Tamil–Secular Nature of Sangam Literature – Distributive Justice in Sangam Literature-Management Principles in Thirukural- Tamil Epics and Impact of Buddhism & Jainism in Tamil and -Bakthi Literature Azhwars and Nayanmars – Forms of minor Poetry– Development of Modem literature in Tamil- Contribution of Bharathiyar and Bharathidhasan.													
UNIT II	HERITAGE-RO ART-SCULPT	OCK ART PAINTIN URE	IGS [ΓΟ N	MODER	N 1	Periods	;	3				
Herostone to me sculptures Vill Veenai,Yazhan	odern sculpture - Br agedeities , Thiruv d Nadhaswaram – F	onzeicons- Tribes and thei alluvar Statue at Kanyak cole of Temples in Social at	r handi umari, nd Ecoi	crafts- Makir nomic I	Art of tem ng of mus Life of Tar	ple car making sical instrumen nils.	g—Mass nts-Mridi	ive Terr hangam	racotta 1,Parai				
UNIT III	FOLK AND MA	RTIAL ARTS					Periods		3				
Therukoothu, I Tiger dance- S	Karagattam, Villu	Pattu, Kaniyan Koothu, of Tamils.	Oyillat	tam, L	eather pu	ppetry, Silan	nbattam	, Valar	i,				
UNIT IV	THINAI CONC	CEPT OF TAMILS					Periods		3				
Flora and Fauna Tamils- Educati Sangam Age- C	of Tamils & Aham on and Literacy dur Overseas Conques to	and Puram Concept from T ing Sangam Age- Ancient Cholas.	Tholkap Cities a	piyam and Por	and Sanga rtso Sanga	am Literature- m Age-Export	Aram Co and Imp	oncept (ort dur	of ing				
UNIT VCONTRIBUTION OF TAMILS TO INDIAN NATIONAL MOVEMENT AND INDIAN CULTUREPeriods3													
Contribution of tamils to Indian Freedom Struggle-The Cultural Influence of Tamils over the other parts of India-Self-Respect Movement- Role of Siddha Medicine in Indigenous Systems of Medicine–Inscriptions & Manuscripts— Print History of Tamil Books.													
	Total Periods 15												

TEXT-CUM-REFERENCE BOOKS

1	தமிழக வரலாறும் – மக்களும் பண்பாடும் – கே.கே. பிள்ளை (வெளியீடு:
	தமிழ்நாடு பாடநூல் மற்றும் கல்வியியல் பணிகள் கழகம்).
2	கணினித்தமிழ் – முனைவர்இல. சுந்தரம். (விகடன் பிரசுரம்).
3	கீழடி – வைகை நதிக்கரையில் சங்க நகர நாகரிகம் (தொல்லியல் துறை
	வெளியீடு)
4	பொருநை – ஆற்றங்கரை நாகரிகம். (தொல்லியல் 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.Subaramanian, 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 Civilization 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) (Publishedby: 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.

NONEN ENER	S2 . WINDERNE WI		VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205Image: Image:													
Progra	mme	B.Te	ch.				Prog	ramme	mme Code 104 Regulation						2023	
Depart	tment	Infor	matio	n Tec	hnolog	y						Semest	er		Ι	
Course	Code	Cours	o Nan	no				P	eriods	Per W	'eek	Crea	lit	Max	kimum 1	Marks
Course	Coue	Cours		lic]	L	Т	Р	С		CA	ESE	Total
U230	GE101	Engi	neeri	ng Gr	aphic	s*		,	2	0	3	3	50	100		
Cor Obje	urse ective	• • •	 Develop skills to enhance their ability to know the concept of engineering graphics and to draw the points kept in various positions, lines and planes. Project the drawing of various solids. Sketch sectioned views of solids. Draw the development of surfaces. Draw the isometric and orthographic projections for any given object to the required standard. 													
		At th	At the end of the course, the student should be able to Knowledge CO1: Construct plane surges and develop projection of points. Lines and plane													
Car		CO1: surfac	CO1: Construct plane curves and develop projection of points , lines and plane K2 surfaces K4													
Oute	urse	CO2: Construct projection of solids with various conditions. K4														
Out	omes	CO3	: Desig	gn the	sectior	n of sol	lids an	d analy	yze the	e true s	hape	of the se	ection			K3
		CO4	: Desig	gn and	develo	op the	differe	ent soli	d surfa	aces.						K2
		CO5	: Cons	truct is	sometr	ic and	orthog	graphic	proje	ction o	of diff	erent sol	ids.			K2
Pre-re	quisites	Nil							1 0							
	(3	/2/1 in	dicates	s stren	C gth of o	CO / P correla Progra	O Ma ation) (pping 3-Stror	ng, 2 –	• Mediu	ım, 1	- Weak		CO/I Map	P SO ping	
	Cos	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PSO	PSO	
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	
	CO 1	3	3	3	3	3	-	-	-	-	-	-	-	3	-	
	CO 2	3	3	2	2	2	-	-	-	-	-	-	-	2	2	
	CO 3	3	2	2	2	3	-	-	-	-	-	-	-	2	-	
	CO 4	3	2	3	3	2	-	-	-	-	-	-	-	2	2	
	CO 5	3	3	2	3	3	-	-	-	-	-	-	-	3	-	
Cours	e Assess	ment N	Metho	ds												
Direct 1. Continuous Assessment Test I, II & III 2. Assignment 3. End-Semester examination																
1.	Cours	e - end	surve	у												
Cont	ent of th	e Sylla	ibus													

Concep Conven (Not Examin	ots & ntions for ation)	Importance of graphics in engineering applications – Use of drafting instruments – BIS conventions and specifications – Size, layout and folding of drawing sheets – Lettering and dimensioning.	Periods	1							
Unit	– I	PROJECTION OF POINTS, LINES AND PLANE SURFACES	Periods	3+8							
Introduct	tion to P	lane curves, Orthographic projection - principles - projection of point	s, straight li	nes (only first							
angle pro	ojections) and plane surfaces (polygonal and circular).									
Unit	- II	PROJECTION OF SOLIDS	Periods	3+8							
Projectio	ns of sin	pple solids like prisms, pyramids, cylinder and cone when the axis is incli	ned to one re	eference plane.							
Unit -	· III	SECTION OF SOLIDS	Periods	3+8							
Sectionin	ng of sol	ids - prisms, pyramids, cylinder and cone in simple vertical position by	cutting plai	nes inclined to							
one refer	Unit IV DEVELOPMENT OF SUBFACES Poriods 318										
Unit -	·IV	DEVELOPMENT OF SURFACES	Periods	3+8							
truncated	nent of f	ateral surfaces of simple solids like prisms, pyramids, cylinders and cone nyolying prisms, pyramids, cylinders and cones	es – developi	nent of simple							
uncated	truncated solids involving prisms, pyramids, cylinders and cones.										
Unit - V FROM PICTORIAL VIEWS Periods 5+10											
Isometri	c Proje	ction and Introduction to AutoCAD / Solid Edge: Principles of isome	etric projecti	on - Isometric							
scale -Iso	ometric p	projections of simple solids like prisms, pyramids, cylinders and cones &	k orthograph	nic views from							
pictorial	views.										
Demonst Compute use.	tration o er Aideo	only: I Drafting (Auto CAD / Solid Edge): Introduction to drafting packages	and demons	tration of their							
		Tot	al Periods	60							
Text Boo	ok:										
1. H	Basant A	grawal and C.M Agrawal ,"Engineering Drawing ", Tata McGraw Hill ,2	2019								
2. J	ain and	Gautam, "Engineering Graphics & Design ", Khanna Publishing House, 2	2020								
Reference	ce Book	:									
1. I	Dr.P.Kar	nan and Dr.J.Bensam Raj, "Engineering Graphics", JBR Tri Sea Publish	ners Pvt. Ltd	,2024							
2. H	K.V Nata	arajan, "Engineering Drawing and Graphics", M/s. N.Dhanalakshmi, Che	ennai,2020								
3. H	K.Venug	opal and V. Prabhu Raja, "Engineering Graphics"New Age International	l Publishers,	2016							
4. N	N.S Partl	nasarathy and Velamurali, "Engineering Graphics", Oxford University, I	New Delhi,2	015							
5. H	5. Bhatt N.D and Panchal V.M, "Engineering Drawing", Charotar Publishing House, 2014										
E-RESO	URCES):									
1. ł	nttp://npt		Datas UT L	7							
2. ł		el.ac.in/courses/105104148, "Engineering Graphics" - Dr. Nihar Ranjan	Patra, III r	Lanpur							
	1ttp://cfd	el.ac.in/courses/105104148, "Engineering Graphics" - Dr. Nihar Ranjan .annauniv.edu/webcontent.htm, "Engineering Graphics" - Dr.Velamural	Patra , 111 r i	Canpur							



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN

(Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205



Programme	B.Tech.	Programme	code]	104	Regulatio	n	. 2							
Department	Information Technology			Sen	nester				Ι						
Course Code	Course name		Period	s per	week	Credit	Ma	ximum	Marks						
U22CE102	Dosign Thinking*		L	Т	Р	С	CA	ESE	Total						
U25GE102	Design Thinking		1	0	2	1	50	50	100						
	The student should be made	e to,													
Course	• Familiarize with desig	Familiarize with design thinking concepts and principles													
Objective	• Practice the methods, j	 Practice the methods, processes and tools of design thinking. 													
	• Apply the design thinking approach and have ability to model real world situations.														
	At the end of the course, the	student shoul	d be able	to,					KL						
	CO1: Understand and apply t	he concept of	f team bu	ilding	g activit	у			K2						
Course Outcome	CO2: Understand Design Th situations in real world	ninking and a	pply the o	desig	n think	ing approac	h to em	pathize	K3						
	CO3: Identify various metho	ods of empath	y and def	fine t	he prob	lem			K3						
	CO4: Develop creative ideas through design thinking														
	CO5: Understand benefits of	f learning thro	ough obse	ervati	on, exp	erience and	l applica	tion	K5						
Pre-requisites	-														

	(3	/2/1 in	dicates	streng	C gth of c	O / PO) Map tion) 3	ping -Stron	g, 2 – I	Medium	, 1 – W	/eak	CO/PSO Mapping			
		Programme Outcomes (POs)												PSOs		
COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2		
CO 1	2	3	3	3	3	2	2	3	3	3	2	2	3	3		
CO 2	3	3	3	3	3	3	3	3	3	3	3	3	2	2		
CO 3	3	3	1	2	2	2	2	1	2	1	-	-	2	2		
CO 4	3	3	3	3	3	2	2	2	2	2	2	1	2	2		
CO 5	3	3	3	3	1	2	2	2	1	2	2	1	2	2		

Course Assessment Methods

Direct

- 1. Continuous Assessment Test through activities, assignment & Quiz
- 2. Models (Chart/paper/3D)
- 3. Prototype & Presentation

Indirect

1. Course - end survey

Content of the Syllabus

SESSION - I

Introduction – Team Building - Types – 4 C's of Team Building – Levels of Team Building – Benefits of Team Work – Team Building Activity.

SESSION - II

Introduction to Design Thinking – Purpose of Design Thinking – Design Thinking Framework, Empathy and related case studies

6

9

Periods

Periods

SESS	ON - III	Periods	6
Defin	e: Examine and Reflect on the problem.		
SESSI	ION - IV	Periods	12
Genera	ating Ideas – Identifying ideas – Bundling the ideas and create concepts – Rapid Prototy	yping – Idea Refi	nement.
SESSI	ION - V	Periods	12
Impor	ance & testing the design with people - Retest and redefine results	T-4-1 Dt- J-	45
Textb	noks	Total Periods	45
1.	Solving Problems with Design Thinking - Ten Stories of What Works by Jeanne Lied	tka 2013.	
2.	Idris Mootee, "Design Thinking for Strategic Innovation: What They Can't Teach You School", John Wiley & Sons 2013.	1 at Business or I	Design
3.	Yousef Haik and Tamer M.Shahin, "Engineering Design Process", Cengage Learning	, 2 nd edition, 201	1
4.	Design of Business: Why Design Thinking is the Next Competitive Advant age by Ro	ger L. Martin 20	09.
5.	Change by Design: How Design thinking transforms organizations and empires In Business, Brown, Tim and Berry.	nnovation, 2009,	Harper
Refere	ences		
1.	Design thinking toolbox by Michael Lewick, Wily 2020		
2.	Design thinking playbook by Michael Lewrick, Wily 2019		
3.	Creative Confidence: Unleashing the Creative Potential Within Us All by by Tom 201	4	
4.	The Design of Everyday Things: by Don Norman 2013		
E-Res	ources		
1.	https://www.collectivecampus.io/blog/6-resources-to-help-you-learn-design-thinking		
2.	https://thisisdesignthinking.net/on-design-thinking/design-thinking-resources/		
3.	http://hs.griet.ac.in/pdf/studymaterialsgr20/Design%20Thinking%20Lab%202020-21	l.pdf	
4.	https://www.mindtools.com/brainstm.html		
5.	https://www.quicksprout.com/. /how-to-reverse-engineer-your-competit		
6.	https://www.youtube.com/watch?v=2mjSDIBaUlM		
7.	thevirtualinstructor.com/foreshortening.html		
Activ	ity Based Learning/Practical Based Learning		
http://	/dschool.stanford.edu/dgift/		
Onlin	e Course		
1	https://onlinecourses.nptel.ac.in/noc19_mg60/preview		
2	https://www.ibm.com/design/thinking/page/badges/core-skills		

	VIV (EKANANDHA CO Autonomous Institut Elayampa	LLEGI ion, Aff layam,	E OF E iliated Tiruche	NGINE to Anna engode	EERING H Universit - 637 205	F OR WOMEN y, Chennai)			ISO 80012015
Programme	B.Tech.		Progra	amme	Code	104	Regula	tion		2023
Department	Information	on Technology					Seme	ester		Ι
Course Code	Co	urse Name	Pe	riods I Week	Per	Credit	Maxii	num	Marks	\$
			L	Т	Р	C	CA		ESE	Total
U23PH102	Physics L	aboratory ^{\$}	0	0	3	1	60		40	100
Course > Understand elastic behavior of Materials Predict viscous force in liquids. > Predict viscous force in liquids. Objective > Gain knowledge in measuring the lowest thickness materials > To Identify wavelengths of prominent lines using polychromatic lamp > Observe heat conduction in bad conductor > Understand the principle of interferometer										
	At the end	of the course, the s	tudent	will be	e able to)		Kno	wledg	ge Level
	CO1: Mea	sure the young's mo	odulus	of the	materia	ls, Rigidi	ty modulus –		K3	
Course	CO2: Calc wire	culate Coefficient of e using Air wedge	f viscos	sity of	liquid a	and thick	ness of thin		K3	
Outcome	CO3: Obse	erve and measure th	ne diffe	erent w	avelen	gths of m	ercury		K3	
	Spe	ctrum and dispersive	e powe	er of a	prism duatar	Talmar	whow to		V2	
	CO4: Illustrate the conductivity of bad conductors. To know how to determine the velocity of ultrasonic waves in liquid									
	CO5: Understand the importance of laser beam compared to									
	ordi	inary light				-				
Pre-requisites	Nil									

	CO / PO Mapping													
(3/2	(3/2/1 indicates strength of correlation) 3-Strong, 2 – Medium, 1 - Weak													
COs	Programme Outcomes (POs)													
PO	PO												PSO 2	
1	2	3	4	5	6	7	8	9	10	11	12			
CO1 3	1											2		
CO 2 3	3	1	2	2								2		
CO 3 3	2			2								3		
CO 4 3	3		1									1		
CO 5 3	1	1		1								2		
· · · · ·														

Course Assessment Methods

Direct

- 1. Prelab and post lab test
- Execution of experiment and Viva-Voce
 End-Semester examinations

Indirect

Course - end survey

Content of the syllabus

	PHYSICS LABORATORY	
S.No.	Experiments	СО
1.	Determination of Young's modulus of the material - Uniform bending method	CO1
2.	Determination of Young's modulus of the material - Non uniform bending method	CO1
3.	Determination of Rigidity modulus – Torsion pendulum	CO1
4.	Determination of Coefficient of viscosity of a liquid – Poiseuille's method	CO2
5.	Determination of thickness of a thin material – Air wedge method	CO2
6.	Determination of wavelength of mercury spectrum – spectrometer grating	CO3
7.	Determination of Dispersive power of a prism – Spectrometer	CO3
8.	Determination of thermal conductivity of metallic glass using Lee's Disc Method	CO4
9.	Determination of velocity of sound and compressibility of liquid – Ultrasonic interferometer	CO4
10.	Determination of Wavelength and particle size using Laser	CO5
	Total Periods	30
Lab M	lanual	
1.	R. Jayaraman, Engineering Physics Laboratory Manual, Pearson Pub, Edition-2021.	
2.	A.K. Katiyar & C.K. Pandey Engineering Physics: Theory and Practical, Wiley Pub,2 nd	Edition.
3.	Dr.P.Mani, "Physics laboratory manual", Dhanam publisher, Chennai – 600 042. (2024)	
4.	G.Senthil Kumar, "Physics laboratory manual", VRB Publishers Private Limited, Chenna	i. 2024.

Q	VIVEKANANDHA (Autonomous El	COLLEGE OF Institution, Affiliated ayampalayam, Tiruci	ENGINI d to Anna hengode –	EERIN Univers 637 20	[G FO] ity ,Che 5	R WOME ennai)	ÎN	TÜVRhei	Minagement System Social Social Socia	
Programme	B.E. / B.Tech.,	Prog	gramme	Code		Regul	ation		2023	
Department	CSE, EEE, ECE, IT	, BT, CST & BN	Æ			Sem	lester		Ι	
Course Code	Course N	ame	Period	s Per V	Neek	Credit	M	aximu	m Marks	
	Course IV	ante	L	Т	Р	С	CA	ESE	Total	
U23CS102	Programming for Problem Solving L	aboratory	0	0	2	1	60	40	100	
Course Objective	 The main objective of the course is to Develop simple C programs to illustrate the applications of User Defined and Derived Data Types such as Arrays, Pointers, Structures, and Functions. 									
	At the end of the cours	se, the student sho	uld be al	ole to,				K	nowledge Level	
Course	CO1: Develop C pro problems using Cond	grams for compu litional and Loop	ter based bing state	d solut ements	ion of	simple re	al wor	ld	K3	
Outcome	CO2: Implement sim	ple C Programs	using St	rings a	nd Ar	rays			K3	
	CO3: Implement C p	rogram for simpl	le applic	ations	using	Pointers			K3	
	CO4: Write C progra	ims that perform	operatio	ons on	File				K4	
	CO5: Demonstrate C	C Programs using	Structu	res					K3	
	·							•		

	CO / PO Mapping													CO/PSO		
	(3/2/1 indicates strength of correlation) 3-Strong, 2 – Medium, 1 - Weak													Mapping		
COs	Programme Outcomes (POs)												PSOs			
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO 2		
CO 1	3	2	1	1	2							2	3	3		
CO 2	3	2	1	1	2							2	3	3		
CO 3	3	2	1	1	2							2	3	3		
CO 4	3	2	1	1	2							2	3	3		
CO 5	3	2	1	1	2							2	3	3		

Course Assessment Methods

Direct

1. Pre lab and post lab test

2. End-Semester examination

Indirect

1. Course - end survey

	List of Experiments	CO's
1.	Write a C program that accepts an employee's ID, total worked hours in a month and the amount he received per hour. Print the ID and salary (with two decimal places) of the employee for a particular month.	CO1
2.	Write a program in C to calculate the sum of three numbers with input on one line separated by a comma.	CO1

3.	Write a program in C to find the sum of the series $[x - x^3 + x^5 + \dots]$.	CO1
4.	Write a program in C to find the number and sum of all integers between 100 and 200 which are divisible by 9.	CO1
5.	Write a program in C to count the total number of duplicate elements in an array.	CO2
6.	You are given an input string 'S'. Your task is to find and return all possible permutations of the input string. Note: The input string may contain the same characters, so there will also be the same permutations. The order of permutation does not matter. Sample Input xyz sample Output xyz, xzy, yzx, zxy, zyx Sample Output : All the possible permutations for string "XYZ" will be "XYZ", "XZY", "YZX", "ZXY" 	CO2
7.	Find the Smallest and Largest Element in an Array Method 1: Traverse the array iteratively and keep track of the smallest and largest element until the end of the array. Method 2: Traverse the array recursively and keep track of the smallest and largest element until the end of the array. Method 3: Sort the array using STL and return the first element as the smallest element and the last element as the largest element. For example, consider the array. $arr = \{1, 2, 3, 4, 5\}$ Sample output: Smallest element: 1 Largest element: 5	CO2
8.	Write a C program to find the sum of all the multiples of 3 and 5 below 100 using pointers. We have to find the number of numbers which are multiples of both 3 and 5 in the first 100 natural numbers. Multiples of both 3 and 5 in the first 100 natural numbers are the multiples of LCM of 3 and 5. LCM of 3 and 5 =3×5=15 Sample output: Multiples of 15 below 100 are 15, 30, 45, 60, 75 and 90.	CO3
9.	 write a C program to count number of characters, words and lines in a text file. Logic to count characters, words and lines in a text file in C programming. Example Source file I love programming. Working with files in C programming is fun. I am learning C programming at VCEW. Sample output Total characters = 100 Total words = 18 Total lines = 3 Write a C program to implement Student database using Structure 	CO4
10.	Sample output: Enter details of student: Name :abi	CO5

RollN	0:101		
Percer	ntage :89.7		
]	Entered details:		
Name	: abi		
RollN	o: 101		
Percer	ntage: 89.70		
	Total P	eriods	45
Tools Requ	ired		
Codetandra	/ HackerRank / HackerEarth / Any online Problem Solving Platforms		
E-Resource	S		
1.	https://www.programiz.com/c-programming		
2.	https://www.cprogramming.com/		
3.	https://beginnersbook.com/2015/02/simple-c-programs/		

	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOM (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205							R WOM nnai)	EN							
Prog	gramme	B .	TEC	H				Program	mme (Code	104	1	Regulation 2			2023
Depa	artmen	t	Information Techn						ıology				Semester			Ι
Course	Code			Cours	e Nar	ne		Per	Crec	lit	Maximum N			Aarks		
								L	Т	Р	С		CA	ł	ESE	Total
U23M0	CFY1	E ar	nvira 1d Ei	onme ngine	ntal S ering	Scien z ^{\$}	ce	2	0	0	0		10	0	0	100
		Tł	ne ma	in obj	ective	e of th	is co	urse is t	0:						1	I
Course			•	Fami	liariz	e basi	cs of	ecosyst	em an	d crea	ting e	nvii	ronment	al awa	areness.	
Objectiv		Congregate about environmental pollution.														
			•	Cont	rast o	n solie	d was	te and s	social i	ssues						
			•	Acqu	ure kr	nowle	dge 11	n enviro	onment	al leg	islatic	on a	nd prote	ection.		
0			•	Sumi	marize	e popi	ulatio	n grow	th, hun	$\frac{1}{1}$	ghts a	nd	Environ	ment		77 1 1
Course Outcom	e	A	t the e	end of	the c	ourse,	the s		should	be at	ble to,					Level
		di	01: A	Acquı y.	re kn	owled	lge a	ibout E	co-sys	tem,	Natur	al	resource	es anc	I B10-	K1
		C	02:E	Se awa	are of	Envii	conme	ental Po	ollution	and	its cor	ntro.	l.			K3
		C	03:1	nfer a	nd ex	press	Solid	waste i	nanag	ement	t and S	5001	al issue	<u>s.</u>		K3
		C	04: A	Acquir	e Kno	owled	ge ab	out Env	vironm	ental	legisla	atio	n and pr	otecti	on.	K3
		C	05: A	Aware	ness a	bout	popul	lation g	rowth,	huma	an righ	nts a	and Envi	ironm	ent	K2
Pre-requ	isites	N	IL													
	(3/2/1	indica	ates str	ength	CO of cor	/ PO I relatio	Mapp on) 3-S	ing Strong, 2	2 – Mec	lium, 1	1 - We	ak		CO	/PSO M	Iapping
COs	DO	BO	DO	DO	Prog	gramm	ne Out	comes (POs)	DO	- BO	1	BO		PSO	IS DECO2
	1	2	3	4	5	6	7	8	9	10	11		12	PS	501	1302
CO 1	1	2	2			2	3					2		2		
CO 2	3	2	2		1	2	3				1	3		3		
CO 3	3	2	2		1	3	3				1	2		3		
CO 4	1	1	1			2	3				1	2		2		
0.5	1	2	1			2	2				1	3		1		
Course A	Assessn	nent l	Metho	ods												
Direct																
1. 2.	Contin Assign	nuous nmen	s Asse t	essme	nt Tes	st I, II	& III	-								
Indirec	t															
1.	Cours	e - en	id sur	vey												
Content	of the s	syllab	ous													
Unit	- I		IN	TRO SC	DUC CIENC	FION CE A	TO ND E	ENVIR NGINI	RONM EERIN	ENT.	AL		Perio	ods		6
Nature a	and sco	ope o	of env	vironn	nental	educ	ation	- natur	al reso	ources	s – (f	ores	st, wate	r, foo	d,& lar	nd resources)
problems – definit developm	s and re ion – nent.	emedi conse	al me ervati	asure: on of	s. Eco biod	systei iversi	m-Str ty (ii	ucture, n-situ a	charac nd Ex	teristi -situ)	ics and -envir	l fui onn	nctions on nental a	of ecos awarer	system and	Biodiversity d sustainable

Unit – I	II ENVIRONMENTAL POLLUTION AND ITS CONTROL	Periods	6	
Water pollu	ution-causes, effects and control measures of water pollution-	waste water	treatment process	
(secondary-	BOD,COD). Air Pollution – types of air pollutants-CO ₂ , SO ₂ , NO	D ₂ , PAN-source	es- control measures	
(electro stat	tic precipitator, bag house filter, wet scrubber and cyclone separat	or).		
Unit – I	II SOCIAL ISSUES AND SUSTAINABILITY	Periods	6	
Solid waste	e Management-Types (E-Waste, Hazardous waste, Bio-waste)	Disposal met	hod. Sustainability-	
Definition-S	Sustainable development Goals-Environmental issues-global warr	ning and Ozon	e depletion, Climate	
change, Aci	id rain, Carbon foot print-Possible solutions to Environmental iss	ies.		
Unit – I	V SUSTAINABILITY PRACTICES AND	Periods	6	
	ENVIRONMENTAL LEGISLATION	i enous	U	
Zero waste a	and R-concept-circular economy, material life cycle assessment- e	nergy efficiend	ey and management-	
environmen	ntal legislation-air act, water act-wildlife protection act-environme	ntal protection	n act.	
Unit – V	V HUMAN POPULATION AND THE ENVIRONMENT	Periods	6	
Population	growth, human rights, value education, environment and human l	ealth, family w	velfare program,	
women and	child welfare, role of information technology in environment – s	atellite, data ba	se, Geographical	
Information	n System (GIS), Environmental impact Analysis (EIA) and humar	health.		
		Fotal Periods	30	
Text Books	S S	Fotal Periods	30	
Text Books	s Dr.S. Vairam - "Environment Science and Engineering" Ger	Fotal Periods	30 . Edition 2018	
Text Books 1. 2.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education.	Fotal Periods ns publication Edition-2-201	30 . Edition 2018 3	
Text Books 1. 2. 3.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm	Fotal Periods ns publication Edition-2-201 ent Science an	30 . Edition 2018 3 Id Engineering" RK	
Text Books 1. 2. 3.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022.	Fotal Periods ns publication Edition-2-201 ent Science an	30 . Edition 2018 3 Id Engineering" RK	
Text Books 1. 2. 3. References	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022.	Fotal Periods ns publication Edition-2-201 ent Science an	30 Edition 2018 3 d Engineering" RK	
Text Books 1. 2. 3. References 1.	S Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022. Linda Williams- "Environmental Science"-Tata McGRAW – Hi	Fotal Periods ns publication Edition-2-201 ent Science an 1 Edition. Edit	30 . Edition 2018 3 . Edition 2018 . Editi	
Text Books 1. 2. 3. References 1. 2.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022. Linda Williams- "Environmental Science"-Tata McGRAW – Hi T.G.Miller Jr-"Environmental Science"-Wadsworth publishing (Fotal Periods as publication Edition-2-201 ent Science and 1 Edition. Edit Co. Edition -10	30 . Edition 2018 3 . Edition 2018 . Editi	
Text Books 1. 2. 3. References 1. 2. 3.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022. Linda Williams- "Environmental Science"-Tata McGRAW – Hi T.G.Miller Jr-"Environmental Science"-Wadsworth publishing G William P. Cunningham, Barbara Woodworth Saigo- Tata McGra	Fotal Periods ns publication Edition-2-201 ent Science and 1 Edition. Edit Co. Edition -10 aw Hill.Editio	30 . Edition 2018 3 d Engineering" RK ion-I-2008 -2004 n-4-2011	
Text Books 1. 2. 3. References 1. 2. 3. 4.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022. Linda Williams- "Environmental Science"-Tata McGRAW – Hi T.G.Miller Jr-"Environmental Science"-Wadsworth publishing (William P. Cunningham, Barbara Woodworth Saigo- Tata McGr NPTEL Course Notes	Fotal Periods ns publication Edition-2-201 ent Science an 1 Edition. Edit Co. Edition -10 aw Hill.Editio	30 . Edition 2018 3 . Edition 2018 	
Text Books 1. 2. 3. References 1. 2. 3. 4. 5.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022. Linda Williams- "Environmental Science"-Tata McGRAW – Hi T.G.Miller Jr-"Environmental Science"-Wadsworth publishing (William P. Cunningham, Barbara Woodworth Saigo- Tata McGr NPTEL Course Notes Cunnighum and cooper-"Environmental Science"-Jaico Publ, Ho	Fotal Periods as publication Edition-2-201 ent Science and 1 Edition. Edit Co. Edition -10 aw Hill.Edition puse Edition-4-	30 . Edition 2018 3 . Edition 2018 3 . Edition 2018 . Ed	
Text Books 1. 2. 3. References 1. 2. 3. 4. 5. E-Resource	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022. Linda Williams- "Environmental Science"-Tata McGRAW – Hi T.G.Miller Jr-"Environmental Science"-Wadsworth publishing O William P. Cunningham, Barbara Woodworth Saigo- Tata McGr NPTEL Course Notes Cunnighum and cooper-"Environmental Science"-Jaico Publ, Ho	Fotal Periods ns publication Edition-2-201 ent Science and 1 Edition. Edit Co. Edition -10 aw Hill.Edition puse Edition-4-	30 . Edition 2018 3 . Edition 2018 . Edition 2018	
Text Books 1. 2. 3. References 1. 2. 3. 4. 5. E-Resource 1.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022. Linda Williams- "Environmental Science"-Tata McGRAW – Hi T.G.Miller Jr-"Environmental Science"-Wadsworth publishing (William P. Cunningham, Barbara Woodworth Saigo- Tata McGr NPTEL Course Notes Cunnighum and cooper-"Environmental Science"-Jaico Publ, He s <u>https://libraries.ou.edu/</u>	Fotal Periods ns publication Edition-2-201 ent Science an 1 Edition. Edit Co. Edition -10 aw Hill.Edition puse Edition-4-	30 . Edition 2018 3 . Edition 2018 . Edition 2018	
Text Books 1. 2. 3. References 1. 2. 3. 4. 5. E-Resource 1. 2.	s Dr.S. Vairam - "Environment Science and Engineering" Ger Gilbert.M.Masters-"Environmental Science"-Pearson education. Dr.S.Mageswari, Dr.G.Vijayakumar, Ms. A. Preethi-"Environm Publication. Edition 2022. Linda Williams- "Environmental Science"-Tata McGRAW – Hi T.G.Miller Jr-"Environmental Science"-Wadsworth publishing (William P. Cunningham, Barbara Woodworth Saigo- Tata McGr NPTEL Course Notes Cunnighum and cooper-"Environmental Science"-Jaico Publ, Ho es https://libraries.ou.edu/	Fotal Periods ns publication Edition-2-201 ent Science and 1 Edition. Edit Co. Edition -10 aw Hill.Edition puse Edition-4-	30 . Edition 2018 3 d Engineering" RK ion-I-2008 -2004 n-4-2011 -2007	
SEMESTER - II

Ç	2		VIVEI (Aut	KANAN conomou	NDHA C us Institu Elayamı	COLLE ution, A palayam	GE C ffiliat ı, Tiru	OF EN ed to 1 icheng	GINE Anna U gode –	ERI Jnive 637 2	NG FO ersity, C 205	R WC	DMEN i)		TÜVPheinland CERTIRED	ISO 3001-2015			
Prog	gramme	B	S.TECH	I			Prog	gramr	ne Co	de	104	Re	egulati	on	2	023			
Depa	artment	INF	ORM A	ATION	N TECH	INOLO	OGY					2	Semes	ter		II			
Course	code		Cou	rse Na	me	Р	eriod	s Per	Week	C	redit		Max	imu	m Mar	ks To 1			
U23MA	202	Con Ord Equ	nplex A linary 1 ations [:]	Analysi Differe *	is and ential		L 3	1	Р 0		4		40		<u>ESE</u> 60	10tal			
Cou Obje	ırse ctive	The	Main C Un Pro De Kn Ide	Dbjectiv derstar oficient monstr ow abo	ve of the nd the A ly unde rate Vec out the (ne Lapla	e course nalytic rstand tor Dif Ordinar	e is to func the C feren y Dif nsfor	o ctions compl tiatio fferen rm of	and B ex Intention n and tial Eco Deriva	iline egrat Integ quati ative	ear tran ion. gration ons. s and l	sform Integra	ations als.						
		At th	At the end of the course, the student should be able to, Know CO1: Analyze the construction of analytic functions																
		C01	: Analy	ze the	constru	ction o	f ana	lytic	functi	ons.	41		1		K4				
Cou	irse	theorem in evaluation of complex integrals.														K3			
Oute	ome	CO3: Explore the concepts of Green's , Stoke's and Gauss Divergence theorems in real life problems.													K5				
		CO4 equa	I: Und ations.	lerstanc	d the c	concept	s of	solv	ing s	econ	d ord	er dif	ferent	ial	K5				
D	• • • • • • • • • • • • • • • • • • • •	COS	S: Appl	y the c	oncepts	of Lap	lace	transf	form in	n sol	ving O	DE.			K3				
Pre-reg	uisites	-																	
	(3/2)	/1 indic	cates str	ength o	CO / P f correla	O Map tion) 3-	ping Stron	g, 2 –	Mediu	m, 1	- Weak	2		CO Ma	/PSO pping				
COs					Program	nme Ou	tcome	es (PO	s)					PSG	Os				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	РО	7 P	08	PO 9	PO 10	PO 11	PO 12	PSC 1	PSO 2	PSO 3			
$\frac{\text{CO I}}{\text{CO 2}}$	3	2	1	1	1									2	_				
CO 3	3	2	1	1										2					
CO 4	3	2		1	1									2					
CO 5	3	2	1	1										2					
Course	Assessm	ent M	lethods	5															
Direct	~ .																		
1.	Contin	uous A	Assessn	nent Te	st I, II &	z III													
3.	End-Se	emeste	r exam	inations	5														
Indire	ct																		
1.	Course	e - end	survey																
Content	t of the s	yllabu	15																

Unit –	I ANALYTIC FUNCTIONS	Periods	9+3							
Analytic f	functions – Necessary and sufficient conditions for analyticity in	Cartesian and po	lar coordinates -							
Properties	s – Harmonic conjugates – Construction of analytic function - Co	nformal mappin	g – Mapping by							
functions	c+z, cz,1/z and Bilinear transformation.									
Unit -	II COMPLEX INTEGRATION	Periods	9+3							
Problem s	solving using Cauchy's integral theorem and integral formula- Ta	ylor's and Laure	nt's expansions-							
Residues-	Cauchy's residue theorem- Application: Contour integration over	unit circle.	-							
Unit –	III VECTOR DIFFERETIATION & INTEGRATION	Periods	9+3							
Vector D	ifferentiation: Vector and Scalar Functions- Derivatives- Curv	es, Gradient of	a Scalar Field-							
Directiona	al Derivative -Divergence of a Vector Field - Curl of a Vector Field	eld – Line, Surf	ace and Volume							
integrals (concepts only), Green's theorem in a plane(excluding proof), Gau	ss Divergence the	eorem(excluding							
proof), St	oke's theorem (Excluding proof).	1								
Unit - I	IV ORDINARY DIFFERENTIAL EQUATIONS	Periods	9+3							
Second or	rder Linear ordinary differential equations with constant coefficient	ents, Cauchy's -	Euler equations							
(excluding	g proof)- Legendre's Linear differential equations(excluding)	proof) - Method	of variation of							
parameter	8.									
Unit –	V LAPLACE TRANSFORMS	Periods	9+3							
Existence	conditions – Transforms of elementary functions – Transform of u	nit step function	and unit impulse							
function -	- Basic properties – Shifting theorems(excluding proof) -Transfor	ms of derivative	s and integrals –							
Initial and	d final value theorems(excluding proof) – Inverse transforms –	Convolution the	eorem(excluding							
proof) – T	ransform of periodic functions – Application to solution of linear	second order ordi	nary differential							
equations with constant coefficients.										
equations	with constant coefficients.									
		Total Periods	45+15=60							
Text Boo	ks	Total Periods	45+15=60							
Text Bool	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024.	Total Periods	45+15=60 45 th Edition,							
Text Bool 1. 2.	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018	Total Periods hers, New Delhi, raw Hill Educati	45+15=60 45 th Edition, on Pvt. Ltd-							
Text Bool 1. 2. 3.	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022.	Total Periods hers, New Delhi, raw Hill Educati natics – II", Pears	45+15=60 45 th Edition, on Pvt. Ltd- on India							
Text Bool 1. 2. 3. Reference	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022.	Total Periods hers, New Delhi, raw Hill Educati natics – II", Pears	45+15=60 45 th Edition, on Pvt. Ltd- on India							
Text Bool 1. 2. 3. Reference 1.	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd. 6th Edition. New Delhi, 2012.	Total Periods hers, New Delhi, raw Hill Educati natics – II'', Pears tics'' , Tata McG	45+15=60 45 th Edition, on Pvt. Ltd- on India							
Text Bool 1. 2. 3. Reference 1. 2.	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd, 6th Edition, New Delhi, 2012. Krevszig, E., Advanced Engineering Mathematics (10th Edition)	Total Periods hers, New Delhi, raw Hill Educati atics – II", Pears tics" , Tata McGr	45+15=60 45 th Edition, on Pvt. Ltd- on India raw Hill							
Text Bool 1. 2. 3. Reference 1. 2. 3.	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd, 6th Edition, New Delhi, 2012. Kreyszig, E., Advanced Engineering Mathematics (10th Edition) Alan Jefferis , Advanced Engineering Mathematics, Academic P	Total Periods hers, New Delhi, raw Hill Educati hatics – II'', Pears tics'' , Tata McGr , John Wiley (20 ress- New Delhi-	45+15=60 45 th Edition, on Pvt. Ltd- on India raw Hill 15). 2003							
Text Bool 1. 2. 3. Reference 1. 2.	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd, 6th Edition, New Delhi, 2012. Kreyszig, E., Advanced Engineering Mathematics (10th Edition) Alan Jefferis , Advanced Engineering Mathematics, Academic Pr Yunus A Cengel William L Palm III." Differential equations for	Total Periods hers, New Delhi, raw Hill Educati atics – II'', Pears tics'' , Tata McG , John Wiley (20) ress- New Delhi- Engineers & Scie	45+15=60 45 th Edition, on Pvt. Ltd- on India raw Hill 15). 2003 entists" Tata							
Text Bool 1. 2. 3. Reference 1. 2. 3. 4.	 ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd, 6th Edition, New Delhi, 2012. Kreyszig, E., Advanced Engineering Mathematics (10th Edition) Alan Jefferis , Advanced Engineering Mathematics, Academic Pr Yunus A.Cengel, William J.Palm III," Differential equations for McGraw Hill Education Pvt. Ltd, 6th Edition, New Delhi, 2012. 	Total Periods hers, New Delhi, raw Hill Educati atics – II", Pears tics", Tata McGr , John Wiley (20 ress- New Delhi- Engineers & Scie	45+15=60 45 th Edition, on Pvt. Ltd- on India raw Hill 15). 2003 entists", Tata							
Text Bool 1. 2. 3. Reference 1. 2. 3. 4. 5.	 ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd, 6th Edition, New Delhi, 2012. Kreyszig, E., Advanced Engineering Mathematics (10th Edition) Alan Jefferis , Advanced Engineering Mathematics, Academic Pr Yunus A.Cengel, William J.Palm III," Differential equations for McGraw Hill Education Pvt. Ltd, 6th Edition, New Delhi, 2012. 	Total Periods hers, New Delhi, raw Hill Educati atics – II", Pears tics" , Tata McG , John Wiley (20 ress- New Delhi- Engineers & Scio 5(2004)	45+15=60 45 th Edition, on Pvt. Ltd- on India raw Hill 15). 2003 entists", Tata							
Text Bool 1. 2. 3. Reference 1. 2. 3. 4. 5. E-Resourd	 ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd, 6th Edition, New Delhi, 2012. Kreyszig, E., Advanced Engineering Mathematics (10th Edition) Alan Jefferis , Advanced Engineering Mathematics, Academic Pr Yunus A.Cengel, William J.Palm III," Differential equations for McGraw Hill Education Pvt. Ltd, 6th Edition, New Delhi, 2012. John Bird, Higher Engineering Mathematics, Anuradha Agencies 	Total Periods hers, New Delhi, raw Hill Educati atics – II", Pears tics", Tata McG , John Wiley (20 ress- New Delhi- Engineers & Scio 5(2004)	45+15=60 45 th Edition, on Pvt. Ltd- on India raw Hill 15). 2003 entists", Tata							
Text Bool 1. 2. 3. Reference 1. 2. 3. 4. 5. E-Resourd 1.	ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, " Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd, 6th Edition, New Delhi, 2012. Kreyszig, E., Advanced Engineering Mathematics (10th Edition) Alan Jefferis , Advanced Engineering Mathematics, Academic Pr Yunus A.Cengel, William J.Palm III," Differential equations for McGraw Hill Education Pvt. Ltd, 6th Edition, New Delhi, 2012. John Bird, Higher Engineering Mathematics, Anuradha Agencies rces https://en.wikipedia.org wiki > Ordinary_differential_equation	Total Periods hers, New Delhi, raw Hill Educati hatics – II", Pears tics", Tata McGr , John Wiley (20 ress- New Delhi- Engineers & Scio 5(2004)	45+15=60 45 th Edition, on Pvt. Ltd- on India raw Hill 15). 2003 entists", Tata							
Text Bool 1. 2. 3. Reference 1. 2. 3. 4. 5. E-Resour 1. 2.	 ks Grewal B.S., "Higher Engineering Mathematics", Khanna Publis 2024. Ravish R Sing , Mukul Bhatt, "Engineering Mathematics", Mc G 2018 Sivaramakrishna Das. P, Vijayakumari.C, "Engineering Mathem Education Pvt. Ltd-2022. es Wylie, R.C. and Barrett, L.C., "Advanced Engineering Mathema Education Pvt. Ltd, 6th Edition, New Delhi, 2012. Kreyszig, E., Advanced Engineering Mathematics (10th Edition) Alan Jefferis , Advanced Engineering Mathematics, Academic Pri Yunus A.Cengel, William J.Palm III," Differential equations for McGraw Hill Education Pvt. Ltd, 6th Edition, New Delhi, 2012. John Bird, Higher Engineering Mathematics, Anuradha Agencies https://en.wikipedia.org > wiki > Ordinary_differential_equation www.learnerstv.com/Free-engineering-Video-lectures 	Total Periods hers, New Delhi, raw Hill Educati atics – II", Pears tics", Tata McG , John Wiley (20 ress- New Delhi- Engineers & Scio 5(2004)	45+15=60 45 th Edition, on Pvt. Ltd- on India raw Hill 15). 2003 entists", Tata							

	2	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205														150 (8001:0015 entrand
Pro	gramme	B.	ГЕСН	[2 1	Pro	gramm	ne Co	de	104	1	Regulat	ion		2023
Dep	partment	Inf	orma	tion T	echno	ology							Seme	ster		II
Course	e Code		C	ourse	Name]	Period Wee	s Per ek		Crea	dit		Maxiı	mum]	Marks
							L	J	Γ	P	C		CA	E	SE	Total
U23C	H201	En	ginee	ering	Chen	nistry ^{\$}	3	()	0	3		40	(60	100
Course Objecti	ve	The • •	e main Reco Gain Enric and a	n objec ognize know ch the applica	ctive o the ba ledge Know ations.	f this consistent of this consistent of the second	ourse molog cs and of the	is to: gy requ prepa studer	iremoration ration its wi	ents is, p th ti	in wa proper he bas	ater t ties a sics	treatment and appli of Nano	cation materi	is of P ials, tl	Polymers. neir properties
		•	 Gain knowledge in destruction and protection of metals for engineering applications. The students who complete this course successfully are expected to: 													
Course Outcon	ourse The students who complete this course successfully are expected to: CO1: Implement innovative solutions in wastewater treatment process														Knowledge Level	
	CO1: Implement innovative solutions in wastewater treatment process.															K3
CO2: Familiarize with the applications of polymers in the field of engineering.													К3			
		CC app)3: Id	lentify ons	the s	synthesi	is me	thods	of Na	anoj	partic	les a	and their	indus	strial	K2
		CO dor	4: Renestic	cogniz and ii	ze the ndustr	renewa ial appl	ble, n icatio	on ren ns.	ewab	le e	nergy	and	storage	levice	s for	К3
		CO app	5: Ca propria	ategori ate cor	ize the trol te	e metal echniqu	corro es to a	osion i avoid d	n diff corros	fere	nt env	viror	nment an	d find	l out	К3
Pre-req	uisites															
	(3/2/1 i	ndica	tes stro	ength c	CO / of corre	PO Ma	pping 3-Stroi	ng, 2 –	Mediu	um,	1 - We	eak		CO	/PSO]	Mapping
COs			1		Progra	amme O	utcom	es (PO	s)	-			•		PS	Os
	PO 1	P 0 2	PO 3	PO 4	PO 5	PO 6	PO 7	РО 8	PO 9		PO 10	PO 11	PO 12	PSO	01	PSO 2
CO 1	CO 1	3	3	3	2	1	2	2						1		1
CO 2	CO 2	3	2	2	2		2	2						2		2
CO 3	<u>CO 3</u>	3	2	2	3	2	1	2	_					2		2
CO 4 CO 5	CO 4 CO 5	3	3	2 3	2 2	1	$\frac{1}{2}$	3						3		<u>3</u> 2
Course	Assessme	nt N	lothor	le												
Direct 1. 2. 3. Indirect 1.	Course Assessment Methods Direct 1. Continuous Assessment Test I, II & III 2. Assignment 3. End-Semester examinations Indirect 1. Course - end survey															
Unit	t of the sy	llab	us	•	VATE	D TE/	UNIO		v				Dariad	,		9
Introduc	<u>- 1</u> ction-sour	rces	and ir	npurit	ies in	water-s	soft ar	nd har	1 d wate	er-	water	qua	lity para	neters	.Tvpe	s of hardness.

Determination of handware by EDTA method Demostic system twenty and Deilan food water, manipited, and
Determination of nardness by EDTA method. Domestic water treatment. Botter feed water –requisites, scale and
sludge formation in boilers-caustic embrittlement- boiler corrosion- treatment of boiler feed water. Internal
conditioning (carbonate, phosphate, and calgon conditioning) ,external conditioning – ion exchange process,
zeolite process, Electrodialysis. Brackish water –water purification by reverse osmosis.
Unit - IIPOLYMER CHEMISTRYPeriods9
Introduction - occurrence, definitions - functionality - degree of polymerization- classification of polymers -
structure (linear, branched & network polymer structure) block, random & graft copolymers, tacticity, Tg (Factors
influencing Tg), molecular weight - number and weight average method. Types of polymerizations - addition,
condensation and copolymerization. Mechanism of polymerization (Free radical). Preparation, properties and
applications of PE, nylon6, nylon 66, Poly Urethane, poly isoprene and Vulcanization of rubber, TEFLON, PET,
and Bakelite
Unit - III NANO CHEMISTRY Periods 9
Basics- distinction between molecules, nanoparticles and bulk materials; size dependent properties.
Nanoparticles: nanocluster, nanorod, nanotube (CNT) and nanowires. Synthesis: Top down process- laser
ablation, spray pyrolysis, chemical vapour deposition, electro deposition. Bottom up process- precipitation, sol-
gel, thermolysis - hydrothermal, solvothermal -properties and applications of nano materials in medical and
electronic devices.
Unit - IV ENERGY RESOURCES AND STORAGE DEVICES Periods 9
Non renewable energy - nuclear energy, nuclear reaction and its types; Nuclear power plant and its working (light
water nuclear power plant & breeder reactor). Renewable energy and its sources - solar Energy - photo voltaic
cells-working of photovoltaic cell, recent advances in solar cell materials; wind energy - types of wind power
plants (WPPs), components and working of WPPs.
Batteries and fuel cells: types of batteries -alkaline battery, lead storage battery, Ni-Cd battery, lithium battery,
fuel cell - H ₂ -O ₂ fuel cell-applications.
Unit - V CORROSION AND ITS CONTROL Periods 9
Introduction, types of corrosion - chemical and electrochemical corrosion, mechanism, pilling -bedworth rule,
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni).
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni).
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books L. Dr.S. Mageswari, Dr.K. Balachandran, M.S. Viswaksenan, Engineering Chemistry : First Edition, RK
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022.
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P)
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Text Books 45 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018.
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018. 2. Arun Bahl, B.S. Bahl, G.D. Tuli, "Essentials of Physical Chemistry" Published by S. Chand & Company
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 45 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. First Edition - 2017 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition - 2017 References 1. 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018. 2. Arun Bahl, B.S. Bahl, G.D. Tuli, "Essentials of Physical Chemistry" Published by S. Chand & Company Ltd, 2014
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018. 2. Arun Bahl, B.S. Bahl, G.D. Tuli, "Essentials of Physical Chemistry" Published by S. Chand & Company Ltd, 2014 3. Sashi Chawla, Dhanpat Rai & Co (pvt.)Ltd."Engineering Chemistry" Edition- 5- 2013.
 types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018. 2. Arun Bahl, B.S. Bahl, G.D. Tuli, "Essentials of Physical Chemistry" Published by S. Chand & Company Ltd, 2014 3. Sashi Chawla, Dhanpat Rai & Co (pvt.)Ltd."Engineering Chemistry" Edition- 5- 2013. 4. Dr.S.Vairam ,Dr.Suba Ramesh, "Engineering Chemistry" First Edition, Wiley publication, Reprint-2016
 types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018. 2. Arun Bahl, B.S. Bahl, G.D. Tuli, "Essentials of Physical Chemistry" Published by S. Chand & Company Ltd, 2014 3. Sashi Chawla, Dhanpat Rai & Co (pvt.)Ltd."Engineering Chemistry" Edition- 5- 2013. 4. Dr.S.Vairam ,Dr.Suba Ramesh, "Engineering Chemistry" First Edition, Wiley publication, Reprint-2016
 types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018. 2. Arun Bahl, B.S. Bahl, G.D. Tuli, "Essentials of Physical Chemistry" Published by S. Chand & Company Ltd, 2014 3. Sashi Chawla, Dhanpat Rai & Co (pvt.)Ltd."Engineering Chemistry" Edition- 5- 2013. 4. Dr.S.Vairam ,Dr.Suba Ramesh, "Engineering Chemistry" First Edition, Wiley publication, Reprint-2016 E-Resources 1. https://www.who.int/water_sanitation_health/dwa/arsenicun6.pdf
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018. 2. Arrun Bahl, B.S. Bahl, G.D. Tuli, "Essentials of Physical Chemistry" Published by S. Chand & Company Ltd, 2014 3. Sashi Chawla, Dhanpat Rai & Co (pvt.)Ltd."Engineering Chemistry" Edition- 5- 2013. 4. Dr.S.Vairam ,Dr.Suba Ramesh, "Engineering Chemistry" First Edition, Wiley publication,Reprint-2016 E-Resources 1. <u>https://www.who.int/water_sanitation_health/dwq/arsenicun6.pdf</u>
types of electrochemical corrosion – galvanic corrosion, pitting corrosion, crevice corrosion, corrosion on wire fence and pipeline corrosion, factors influencing rate of corrosion. Corrosion control methods – sacrificial anode and impressed cathodic current. Protective coatings – paints: constituents and functions, metallic coatings - steps involved in cleaning the surface for electroplating, electroplating (Au), and electro less plating (Ni). Total Periods 45 Text Books 1. Dr.S.Mageswari, Dr.K.Balachandran, M.S.Viswaksenan, Engineering Chemistry : First Edition, RK publication, Edition-2022. 2. O.G.Palanna, "Engineering Chemistry "Tata Mc GrawHill PVT,Ltd. Second Edition -2017 References 1. P. C. Jain and Monica Jain, "Engineering Chemistry", 17th Edition, DhanpatRai Publishing company (P) Ltd, New Delhi, 2018. 2. Arun Bahl, B.S. Bahl, G.D. Tuli, "Essentials of Physical Chemistry" Published by S. Chand & Company Ltd, 2014 3. Sashi Chawla, Dhanpat Rai & Co (pvt.)Ltd."Engineering Chemistry" Edition- 5- 2013. 4. Dr.S.Vairam ,Dr.Suba Ramesh, "Engineering Chemistry" First Edition, Wiley publication,Reprint-2016 E-Resources 1. <u>https://www.who.int/water_sanitation_health/dwq/arsenicun6.pdf</u> 2. <u>https://www.schandpublishing.com/books/tech-professional/applied-science/a-textbook-polymer- chemistry/9788121941129/#.XdZ214MzY2w</u>

	VIVEKANA (Auton	NDHA COLL omous Institutio Elayampala	EGE Ol n, Affiliat yam, Tiru	F ENG ed to Ar	I NEE na Uni le – 63	RING FO versity ,Che 7 205	R WOMEN nnai)	TÜVReinland	KO 800-2015						
Programme	B.E./B.Tech		Progra	amme	Code	104	Regulation		2023						
Department	Information T	echnology					Semester		П						
Course Code	Course	Name	Pe	riods F Week	er	Credit	Max	imum M	arks						
			L	Т	Р	С	CA	ESE	Total						
U23EE201	Basic Electric Electronics E	al and ngineering	3	0	0	3	40	60	100						
Course Objective	 Introduce the basics of electric circuits and analysis Impart knowledge in the basics of working principles and applicatio electrical machines Learn the electrical wiring methods Analyze the characteristics of Semiconductor devices Educate on the fundamental concepts of digital electronics and introduce the functional elements and working of measuring instruments 														
Course At the end of the course, the student should be able to, Course CO1:Understand the basics of electric circuits and type of the connection Course CO2: Understand the basics of electromagnetic laws and basic working principle of DC and AC machines.															
Outcome	CO3: Understand the concepts of tariff, energy saving, illumination, electric lamps and safety measures. CO4:Understand the basic operating characteristics of semiconductor devices. CO5:Understand the fundamentals of digital logics and measuring instruments														
Pre-requisites (3/2/1 indic	Basic concepts CC ates strength of co	and understan) / PO Mappin prelation) 3-Str	ding of r g rong, 2 –	nagnet Mediu	n, 1 - `	ls Weak	CO/PS	O Mappi	ing						
	Pro	gramme Outco	mes (PO	s)		1		PSOs							
COs PO PO	O PO PO P 3 4	0 PO PO 5 6 7	PO 8	PO 9	PO 1 10	PO PO 11 12	PSO1	PS	0 2						
CO1 3 2	2 1		1			3	3								
CO 2 3 2	2 1		1			3	3								
CO3 3 1	1		1			3	3								
CO 4 3 2	2 1		1			3	3								
CO 5 3 2	2 1		1			3	3								
Course Assessment Methods Direct 1. Continuous Assessment Test I, II & III 2. Assignment 3. End-Semester examinations Indirect 1. Course_ and Survey															
<u> </u>															

Unit –	I INTRODUCTION OF ELECTRICAL CIRCUITS	Periods	9
Definition	of Voltage, Current, Power, Energy, Power factor, Circuit parameter	ters, Ohm's la	w, Kirchhoff's law
Introductio	on to AC Circuits and Parameters: Waveforms, Average value, R	MS Value, Re	al power, Reactive
power and	Apparent power, Power factor. Introduction to three phase system	s - types of co	nnections Concept
of DC circ	uits.		
Unit -	II ELECTRICAL MACHINES AND ITS APPLICATIONS	Periods	9
Faraday's	laws of electromagnetic induction - Lens law - Fleming's left hand n	ule and Right l	and rule. Working
principle a	nd construction of AC and DC machines - Construction, Working	ng principle ar	d Applications of
single phas	se Transformer. Motor used for domestic applications.		
Unit – I	III WIRING AND ILLUMINATION	Periods	9
Types of y	wiring-staircase and corridor wiring - wiring accessories. Diffe	ent types of	safety measures -
Earthing.	Electrical tariff -Energy conservation. Simple layout of power syste	m-various ene	rgy resources, The
Laws of Ill	umination- Different types of electrical lamps.		
Unit - I	V SEMICONDUCTOR DEVICES	Periods	9
PN junctio	n diodes - Zener diodes - characteristics. Transistors: PNP and NPN	transistors - T	heory of operation
- Transisto	r configurations -characteristics - comparison. Special semiconduc	tor devices: F	ET - SCR - LED –
V-I charac	teristics – Rectifier and Inverters -UPS – SMPS.		
Unit –	V DIGITAL FUNDAMENTALS AND MEASUREMENTS	Periods	9
Number sy	stems - Boolean Theorems – DeMorgan's Theorem - Logic ga	tes -Implemer	tation of Boolean
Expression	using Gates - SOP and POS forms- Functional elements of an instr	ument, Standa	ds and calibration,
Operating	Principle of Ammeters and Voltmeters.		
	<u>.</u>	Total Periods	45
Text Book	S		
1.	S.K.Bhattacharya, "Basic Electrical and Electronics Engineering", Pe	arson,2017	
2.	D.P. Kotharti and I.J Nagarath, "Basic Electrical and Electronics E Edition, 2020.	ngineering", M	c Graw Hill Third
Reference	, , , , , , , , , , , , , , , , , , ,		e orași rini, rinia
1.	S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016	ical Engineerin	g",
1. 2.	S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016 Mittle,Mittal, Basic Electrical Engineering, 2nd Edition, Tata McC 2016.	ical Engineerin Graw-Hill Editi	g", on,
1. 2. 3.	 S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016 Mittle,Mittal, Basic Electrical Engineering, 2nd Edition, Tata McC 2016. T.K. Nagsarkar and M.S. Sukhija, "Basic Electrical Engineering", C 	ical Engineerin Graw-Hill Editi xford, 2017.	g", on,
1. 2. 3. 4.	 S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016 Mittle,Mittal, Basic Electrical Engineering, 2nd Edition, Tata McG 2016. T.K. Nagsarkar and M.S. Sukhija, "Basic Electrical Engineering", C John Bird, "Electrical and Electronic Principles and Technology", Ferrare 	ical Engineerin Graw-Hill Editi xford, 2017. purth Edition, E	g", on, lsevier, 2010.
1. 2. 3. 4. 5.	 S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016 Mittle,Mittal, Basic Electrical Engineering, 2nd Edition, Tata McC 2016. T.K. Nagsarkar and M.S. Sukhija, "Basic Electrical Engineering", C John Bird, "Electrical and Electronic Principles and Technology", For K MurugeshKumar, "Elements of Electrical Engineering", Vikas Pu 	ical Engineerin Graw-Hill Editi xford, 2017. Durth Edition, E blishing House	g", on, lsevier, 2010. Pvt. Ltd.2011.
1. 2. 3. 4. 5. E-Resource	 S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016 Mittle,Mittal, Basic Electrical Engineering, 2nd Edition, Tata McC 2016. T.K. Nagsarkar and M.S. Sukhija, "Basic Electrical Engineering", C John Bird, "Electrical and Electronic Principles and Technology", Fe K MurugeshKumar, "Elements of Electrical Engineering", Vikas Pu es 	ical Engineerin Graw-Hill Editi xford, 2017. Durth Edition, E blishing House	g", on, lsevier, 2010. Pvt. Ltd.2011.
1. 2. 3. 4. 5. E-Resourc 1.	 S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016 Mittle,Mittal, Basic Electrical Engineering, 2nd Edition, Tata McC 2016. T.K. Nagsarkar and M.S. Sukhija, "Basic Electrical Engineering", C John Bird, "Electrical and Electronic Principles and Technology", Fe K MurugeshKumar, "Elements of Electrical Engineering", Vikas Pu es https://nptel.ac.in/courses 	ical Engineerin Graw-Hill Editi xford, 2017. purth Edition, E blishing House	g", on, lsevier, 2010. Pvt. Ltd.2011.
1. 2. 3. 4. 5. E-Resource 1. 2.	 S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016 Mittle,Mittal, Basic Electrical Engineering, 2nd Edition, Tata McG 2016. T.K. Nagsarkar and M.S. Sukhija, "Basic Electrical Engineering", C John Bird, "Electrical and Electronic Principles and Technology", Fe K MurugeshKumar, "Elements of Electrical Engineering", Vikas Pu es https://nptel.ac.in/courses https://www.electrical4u.com/electrical-engineering-articles/illumina 	ical Engineerin Graw-Hill Editi xford, 2017. purth Edition, E blishing House	g", on, lsevier, 2010. Pvt. Ltd.2011.
1. 2. 3. 4. 5. E-Resource 1. 2. 3.	 S.B. Lal Seksena and Kaustuv Dasgupta, "Fundaments of Electr Cambridge, 2016 Mittle,Mittal, Basic Electrical Engineering, 2nd Edition, Tata McC 2016. T.K. Nagsarkar and M.S. Sukhija, "Basic Electrical Engineering", C John Bird, "Electrical and Electronic Principles and Technology", For K MurugeshKumar, "Elements of Electrical Engineering", Vikas Putes https://nptel.ac.in/courses https://www.electrical4u.com/electrical-engineering-articles/illumina https://ocw.mit.edu/courses/electrical-engineering-and-computer-sciencuits-and-electronics-spring-2007/lecture-notes 	ical Engineerin Graw-Hill Editi xford, 2017. Durth Edition, E blishing House ion-engineering cience/6-002-	g", on, lsevier, 2010. Pvt. Ltd.2011.

	VIVEKANA (Auton	NDHACOLLEGE O omous Institution Affilia Elayampalayam, Tir	F EN ted to to the state of the	GINEI Anna U gode – (E RING H Iniversity 637 205	F OR WON Chennai)	IEN	TÜVRheinland CERTIFIED	SO 9001-2015					
Programme	B.TECH	Programme code	;	104	1	Regulation	ı	20	023					
Department	INFORMATION	TECHNOLOGY			Se	mester			II					
Course code	Co	ursa nama	Per	iods pe	r week	Credit	Max	imum N	Marks					
Course code			L	Т	Р	C	CA	ESE	Total					
U23TA202	தமிழரும்தெ / Tamils and '	தாழில்நுட்பமும் Fechnology*	1	0	0	1	40	60	100					
Content of the	syllabus													
அலகு 1	நெசவு மற்	<u>றும் பானைத்தொ</u>	ழில்	நட்பப்		I	Periods		3					
சங்ககாலத்தில் நெசவுத்தொழில்– பானைத்தொழில்நுட்பம் – கருப்புசிவப்பு பாண்டங்கள் – பாண்டங்களில் கீறல் குறியீடுகள்.														
அலகு 2	அலகு 2 வடிவமைப்பு மற்றும் கட்டிடத்தொழில்நுட்பம் Periods 3													
சங்ககாலத்தில் வடிவமைப்பு மற்றும் கட்டுமானங்கள் சங்க காலத்தில் வீட்டுப் பொருட்களில் வடிவமைப்பு – சங்ககாலத்தில் கட்டுமான பொருட்களும் நடுகல்லும் – சிலப்பதிகாரத்தில் மேடை அமைப்பு பற்றிய விவரங்கள்–மாமல்லபுரச்சிற்பங்களும் கோவில்களும்– சோழர்காலத்துப் பெருங்கோயில்கள் மற்றும் பிறவழிபாட்டுத்தலங்கள் – நாயக்கர்காலக்கோயில்கள்-மாதிரிகட்டமைப்புகள் பற்றி அறிதல் மீனாட்சி அம்மன் ஆலயம் மற்றும் திருமலை நாயக்கர் மஹால் – செட்டிநாட்டு வீடுகள் – பிரிட்டிஷ் காலத்தில் சென்னையில் இந்தோ-சாரோசெனிக்கட்டிடக்கலை.														
அலகு 3	உற்பத்தித்	தொழில்நுட்பம்				I	Periods		3					
கப்பல் கட்(எஃகு – வர அச்சடித்தல் கண்ணாடி தொல்லியல	டும் கலை – உ லாற்றுச்சான் ல – மன மணிகள் – ல்சான்றுகள் -	_லோகவியல் – இரு றுகளாக - செம்பு ரி உருவாக்கும் சுடுமண்மணிகள் - சிலப்பதிகாரத்தில்	ம்புத் மற்ற ெ சால் மன	தொடி றம் த தாழி ங்கும னிகள்	ழிற்சான ங்கநான ற்சானை ணிகள் வின் வன	லை – இரு ணயங்கள் – எலுப் ககள்.	ம்பை ா – நா – க ப்புத்து	உருக் ாணய ல்மன ண்டுல	குதல் ங்கள் ரிகள், கள் –					
அலகு 4	நீர்	வேளாண்மை மற் ப்பாசனக்கொமி	ற்றும் லாகப்	பம்		I	Periods		3					
அணை, ஏ கால்நடைட வேளாண்ன மீன்வளம் - அறிவுசார்ச	ரி, குளங்கள் ராமரிப்பு - பை மற்றும் - முத்துமற்று -மூகம்.		கால காக ர்ந்த) – ெ	 க்குமு பெருங்	ழித்தாட வமை பல்பாடு கடல் கு	ட் பின் (க்கப்பட்ட கள் – க நறித்த ப(முக்கி _ கி கடல்ச ண்டை	பத்துல னறுக ார்அற ய அ	வம் – ள் – றிவு – றிவு –					
அ லகு 5	அறிவியல்	தமிழ் மற்றும் கன	ரினி	த்தமி	ழ்	F	Periods		3					
அறிவியல் மின்பதிப்ப இணையச் அகராதிக	தமிழின் எ பு செய்தல் கைல்விக்கழ ள் – சொற்க்	வளர்ச்சி – கணி – தமிழ் மின் கம் – தமிழ் தவைத்திட்டம்.	ினித் ா ெ மின்!	தமிழ் பாரு நாலச	ஹ் வளர ட்கள் 5ம் –	ர்ச்சி – உருவா இணை	தமிழ் க்கம் rயத்தி	நூல்க _ த)ல் த	களை தமிழ் தமிழ்					
						Total Pe	eriods	1	15					

Q	VIVEKANANDHACOLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution Affiliated to Anna University Chennai) Elayampalayam, Tiruchengode – 637 205 Image: Comparison of												
Programme	B.TECH	Programme code	;	104	4]	Regulation		2023				
Department	INFORMATION	TECHNOLOGY				Sem	nester]	II			
	a		Peri	ods pe	er wee	ek	Credit	Ma	ximum Marks				
Course code	Col	urse name	L	Т	F	2	С	CA	ESE	Total			
U23TA202	தமிழரும்தெ Tamils and Teo	ாழில்நுட்பமும் / chnology*	1	0	C)	1	40	60	100			
Content of the	e syllabus												
UNIT I	JNIT I WEAVING AND CERAMIC TECHNOLOGY Periods 3												
Weaving Indus Potteries	stry during Sanga	m Age – Ceramic techno	logy – B	lack a	nd Re	ed Wai	re Potteries	(BRW)) –Graffi	ti on			
UNIT II	DESIGN AND C	ONSTRUCTION TECH	NOLOG	Y			Р	eriods		3			
Designing and materials and H Temples of Ma study (Madurai Madras during	Structural construct Iero stones of Sang amallapuram - Gre i Meenakshi Templ British Period.	ction House & Designs in gam age – Details of Stag at Temples of Cholas and le)-Thirumalai Nayakar M	househo e Const l other w Iahal - C	old ma ruction orship Chetti	terial ns in S place Nadu	s durir Silappa es - Te Hous	ng Sangam . athikaram - emples of N es, Indo - S	Age - B Sculpti ayaka I araceni	ures and Period - ' c archite	Type ecture at			
UNIT III	MANUFACTUR	ING TECHNOLOGY					Pe	eriods		3			
Art of Ship But history - Mintin bone beats - Ar	ilding - Metallurgi ng of Coins – Beau cheological eviden	cal studies - Iron industry ds making - industries St aces - Gem stone types de	7 - Iron s one bea scribed	meltir ds - G in Sila	ng,stee lass b ppath	el - Co beads - nikaran	pper and go Terracotta n.	old- Co beads -	ins as so Shell bea	urce of ads/			
UNIT IV	AGRICULTURE	AND IRRIGATION TE	CHNOL	.OGY			Pe	eriods		3			
Dam, Tank, po for cattle use - Knowledge of	nds, Sluice, Signifi Agriculture and Ag Ocean - Knowledg	cance of Kumizhi Thoor gro Processing - Knowled e Specific Society.	npu of C lge of Se	Chola l ca - Fis	Perioc	d, Anir es – Pea	nal Husban arl - Conche	dry - W e diving	vells desi g - Ancie	igned ent			
UNIT VSCIENTIFIC TAMIL & TAMIL COMPUTINGPeriods3													
Development of Software – Tar	Development of Scientific Tamil - Tamil computing – Digitalization of Tamil Books – Development of Tamil Software – Tamil Virtual Academy – Tamil Digital Library – Online Tamil Dictionaries – Sorkuvai Project												
				-			Total Per	riods	1	15			

TEXT-CUM-REFERENCE BOOKS

1	தமிழகவரலாறும் – மக்களும்பண்பாடும் – கே.கே. பிள்ளை (வெளியீடு: கமிழ்நாடுபாட நால்மற்றும்கல்லியியல் பணிகள்கமகம்)
2	தனினிக்கமிம் – முனைவர்வை சுந்தாம் (விது ன்பிரசுரம்)
3	கீடிடி – வைகைநகிக்களையில்சங்கநகாநாகரிகம்
	(தொல்லியல்துறைவெளியீடு)
4	பொருநை - ஆற்றங்கரைநாகரிகம். (தொல்லியல்வெளியீடு)
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 Civilization 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.

Q	j t	VI	VEKA	NAND (Autonor	HA CO mous Insti Elayam	LLEC tution, A palayar	GE OF Affiliate m, Tiruo	F EN(ed to A chengo	GINE nna Un ode – 63	ERI iversi 37 205	NG F(ty ,Che	OR W nnai)	VOMEN	1	Enternant Entern
Program	nme	B.E. /	BT.ec	h.		F	Progra	mme	Code			Reg	ulation		2023
Departr	nent	CSE, I	Г & СЅ	Т								Se	emester		II
Course (Code		Cour	se Narr	ne	F	Periods	s Per	Week	С	redit		Maxi	mum l	Marks
			cour				L	Т	Р		С		CA	ESE	Total
U23CS2	04	OBJE PROG	CT OR RAMN	AIENTI MING	ED		3	0	2		4		50	50	100
Course Objectiv	∕e	The ma	ain obje Provie introd Learn	ective o de the o luction Java p	of the concepts to C++. rogramm	urse is of obj ning a	to, ject or nd its	ienteo basic	l prog packa	ramn Iges i	ning v ncludi	vith a ing G	comprei UI progr	hensiv rammi	e ng.
		At the	end of	the cou	rse, the	studen	t shou	ld be	able t	0,					Knowledge Level
Course CO1: Apply the concepts of classes and objects to solve simple problems using C++													K3		
Outcom	e	CO2: Develop simple applications using basic Java constructs													K3
CO3: Build applications making use of packages, interfaces and exception handling in Java											K3				
		CO4:	Make	use of r	nultithre	ading	and I/	O stre	eams						K3
		CO5: classe	Develor s and co	op simp ontrols	ole even	t-based	d GUI	appli	cation	ns in	Java u	ising	AWT		K3
Pre-		Nil													
requisites	8														
	(2/2/1 : 4			CO/P	O Map	oping	~)	Madia	1	West	-		CO/I	PSO ning
Cos	(<i>5/2/</i> 1 IIIu	icates si	trength	Program	nme Or	utcome	<u>g, 2 –</u> es (PO	s)	III, 1 ·	– wea	<u>x</u>		PSOs	
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO	8 P	09	PO	PO	PO 12	PSO1	PSO 2
CO 1	3	2	1	1							10	11		3	3
CO 2	3	2	1	1										3	3
CO3	3	2	1	1										3	3
CO 4	3	2	1	1										3	3
Course	SCASE	ment M	ethods	1	I		1					I			<u> </u>
Direct	100000		cinous												
1.	Conti	nuous A	ssessme	ent Test	t I, II & I	Π									
2.	Assig	nments /	Quiz	ations											
Indirect	Enu-c	semester	examin	lations											
1. (Course	- End su	ırvey												
Content	of the	svllabu	s												
Unit -	- I	<i></i>	- IN7	FROD	UCTIC	ON TO	000	PA	ND C	++			Period	s	9
Object C	Deject Oriented Programming - Features – Merits & Demerits- Applications – Difference – Structure of C++ -														
Input and	d Outp	out state	ments-	Classes	s and Ob	ojects-	Cons	tructo	$rs - \tilde{L}$)estru	ictors				
Unit	: - II			IN	TROD	UCTI	ON T	O JA	VA				Periods	3	9

Structur	e of Java	- Data Types - Variables – control statements - Arrays –	-Classes – Fu	indamentals –
Declarin	ng Objects	s - Assigning Object Reference Variables - Methods - Cons	structors - thi	s keyword -
Overloa	ding Meth	ods - Access Control – Static – Inheritance – Basics – Super ke	yword	
Unit	t – III	PACKAGES, INTERFACES AND EXCEPTION HANDLING	Periods	9
Abstrac	t Classes ·	- final with Inheritance. Packages - Access Protection - Impor	ting Packages	s – Interfaces -
Exception	on Handlir	ng basics – Multiple catch Clauses- Nested try Statements – Java	's Built- in Exe	ceptions – User
defined	Exception			
Unit	t - IV	MULTITHREADING AND I/O	Periods	9
Java Th	read Mode	el - Creating a Thread – Creating Multiple Threads – Synchroniz	ation – Enume	Files
Wiappe.	<u>Periods</u>	0		
String (7			
Event -	Action Li	stener AWT Classes - Window Fundamentals - Frame Window	s = AWT Cor	trols - Lavout
Manage	rs.	scher. The Perusses window Fundamentals France window		hiolis Eugout
			Total P	eriods 45
		Suggested List of Experiments		CO's
1. I	Develop a soverloading	simple C++ application using operator overloading and function	L	CO1
2. I	Develop si	mple Java programs using control statements and arrays		CO2
3. I	Demonstra	te polymorphism using Java programs		CO3
4. I	Develop Ja	va applications using interfaces and packages		CO3
5. I	Demonstra	te exception handling in Java		CO3
6. I	Develop m	ultithreaded applications in Java		CO4
7. I	Develop pr	ograms in Java using java.io packages		CO4
8. I	Demonstra	te string manipulation in Java		CO5
9. I	Develop ap	plications in Java using collections classes		CO5
10. I	Design a G	UI based simple application using AWT classes		CO5
		Lecture	45: Practical	l 30; Total: 75
Text Bo	ooks			
1.	Reema Delhi,20	Thareja, "Object Oriented Programming with C++", Third Edition, Ox 018 (UNIT 1)	ford University	7 Press, New
2.	Herbert Educatio	Schildt, "Java: The Complete Reference", 12 th Edition, McGraw on, New Delhi, 2022.(UNIT 2 to 5)	Hill X	
Reference	ces			
1.	Buyya R andApp	ajkumar, ThamaraiSelvi S. and Xingchen Chu, "Object Oriented Prog lications", 1 st Edition, McGraw Hill, New Delhi, 2009.	ramming with J	ava Essentials
2.	Cay S. H	Iorstmann, "Core Java: Volume I Fundamentals", 11th Edition, Addiso	n Wesley, New	Delhi, 2019.
3.	Deitel P	aul and Deitel Harvey, "Java How to Program", 11th Edition, Pearson I	Education, New	Delhi, 2018.
Tools Re	equired			
1.	Codetand	ra / HackerRank / HackerEarth / Any online Problem Solving Platform	ns	
E-Resou	urces			
1.	www.ng	<u></u>		
2.	https://v	www.javatpoint.com/cpp-oops-concepts		
3.	https://v	www.javatpoint.com/java-tutorial		

		VI	VEKA (Au	NAND itonomo	HA CC us Instit Elayarr	DLLE(tution, <i>A</i> apalayar	GE OF I Affiliated n, Tiruch	ENGI to Ani iengodo	NEEH na Uni e – 637	RING versity 7 205	FOR , Chen	WOM (nai)	EN	TÜVRheini CERTITIE	ISO 9 and p to sto	ADI:2015
Progr	amme	B.Te	ch.]	Progran	nme (Code	10)4	Regu	lation		20	23
Depar	tment	INFC	ORMA	TION	ГЕСН	NOLO	GY					Sen	nester]	Ι
Course C	Code		Cou	rse Na	me		Perio W	ods Pe /eek	er	Cre	edit		Maxi	mum N	/larl	KS
							L	Т	Р	0	2	C	A	ESE		Total
U23EN	202	Prof	essio	nal			2	0	3	3	3	5	0	50		100
		Com	imuni	catio	1*			Ũ	U				0	00		100
Cours Object	se ive	•	 Provide suitable reading & writing tasks to develop communicative ability for academic and professional progress Inculcate channelized reading to make learners proficient in the chosen professional writing contexts. Improve learners' vocabulary and grammar to supplement their language use at professional context Assist students in the development of intellectual flexibility, creativity, and cultural literacy so that they may engage in life-long learning. Identify and begin to apply the language features of academic and professional writing and speaking 													
		At th	e end	of the o	course,	, the st	udent s	hould	be al	ole to	,				K	nowledge Level
		CO1: Acquire sufficient command over language to speak at an academic or professional context														K1
Cours Outcor	se me	CO2: Write technically well at professional contexts through exposing them to similar readings.														K1
		CO3: Use language at length at technical and professional situations through enrichment of vocabulary and strengthening of grammatical knowledge.														K2
		co4 a var	: Ethic iety of	ally ga	ther, und of the second	unders electro	tand, ev nic sou	aluato	e and	syntł	hesize	e infori	nation	from		K2
		CO5	: Be p	roficie	nt in o	ral cor	nmunic	ation	and v	vritin	g.					K3
Pre-requi	sites	Nil														
					CO /	PO Ma	apping							(C O /	PSO
	(3/2	2/1 indic	cates st	rength o	of corre	elation)	3-Stron	ıg, 2 –	Medi	um, 1	- Wea	ak		N	Iap	ping
Cos	PO		[Prog	ramme	Outcon	nes (P	Os)	- T	BO	PO	DO		PS	Os
	1	PO 2	PO 3	PO 4	PO 5	PO 6	7	8	P	09	10	11	12	PSO	1	PSO 2
CO 1						2				3	3		3		\square	1
CO 2						2				3	3		3	_	-+	1
CO3												1				
C04						2		<u> </u>		3	3		3		+	1
	1					-	1	1	I	-	5	1	5			<u> </u>
Course As	sessme	ent Me	thods													
Direct																
1. (Continu	ious A	ssessm	ent Te	st I &	II	-			·11 •	1					
2. C 3. A 4. H	Continu Assignr End-Sei	ious A: nents mester	ssessm exami	nation	st III 1	n the (ommu	nıcatı	on Sk	alis L	Lab					

Indirect			
1. (Course - end survey		
Content of	' the syllabus		
Unit –	Ι	Periods	15
Listening	Listening for Cultural Awareness, Listening to Professional Con-	nversations, Ta	alks, Interviews and
Lectures S	peaking- Developing Confidence to get rid of Fear on the Dias, I	Discussion at a	Corporate Context.
Reading-	Inferential Reading, Reading Short Messages and Technical Articl	es, Writing - Ir	ntroduction to Letter
Writing, W	/riting Formal and Informal Letters, Thanking Letters, Letters Call	ing for Quotati	ons, Letters Placing
an Order,	Seeking clarification, Letters of Complaint. Focus on Lang	uage–Adjectiv	es and Degrees of
Compariso	ons		
Unit –	II	Periods	15
Listening	Listening to specific information relating to technical content, L	istening for sta	atistical information
Speaking-	Expressing opinions, Formal Discussions, Describing Role	Play at Bus	iness Context and
Consolida	ing Ideas. Reading –Reading Technical Articles in Journals and Co	omparing Artic	eles. Writing- Letter
seeking pe	rmission to undergo practical training and to undertake project we	ork. Focus on	Language– Simple,
TImit	and complex sentences and Transformation of Sentences.	Dominda	15
Unit –	Listaning to understand the overall meaning. Listaning to Intervi	Perious	15 ntationa Speaking
Civing Inc	tructions and Showing Directions and Pophracing Instructions P	ews and Flese	ming and Sconning
Reading L	b Advertisements Writing Applying for a Job Writing a CV	Groun Discus	sion Introduction –
Topic Ana	lysis – Thematic Expressions-Objective and content of discussion	or oup Discus	sion. Introduction
I opic 7 ma	V	Periods	15
Listening.	Listening and retrieving Information Sneaking- Developing	fluency and	Coherence Accent
Neutraliza	tion. Voice Modulation, and Intonation. Improving Voice	Quality. Rea	ding –Reading and
understand	ling Advertisements. Writing- Letters to the Editor. Letter of Con	nplaint, Vario	us kinds of Reports.
Permission	n to go for Industrial visits. Presentation skills: Making Self Int	roduction Effe	ctively-Elements of
effective p	resentation – Structure of presentation - Presentation tools – Voice	Modulation -	Audience analysis -
Body lang	uage – Accents analysis – Stylistics.		•
Unit –	V	Periods	15
Listening	Listening to Fragmented Texts and Filling in the Blanks. Spea	king-Mind M	apping, Developing
Coherence	and Self-Expression, Making presentations, Paralinguistic and	l Extra linguis	stic Features (body
language),	Reading-Predicting content, Interpreting Reports. Writing-Writ	ing Proposals,	Agenda, Minutes of
the Meetin	g. Soft Skills: Introduction - Change in Today's Workplace: Soft	Skills as a Co	mpetitive Weapon -
Antiquity	of Soft Skills - Classification of Soft skills - Ability to work as a te	am.	I
		Total Periods	75
Text Bool	ίς Γ		
1.	Dr. S. R. Kannan, Sumant. S, Pereira Joyce, Professional Commu	nication, Vijay	Nicole Imprints
	Pvt. Ltd., 2023.		2010
2.	Sokkaalingam, S.RM., The Art Of Speaking, English Versatile F	ublishing Hou	se, 2019.
Reference	S		
1.	Norman Whitby - Business Benchmark Pre-Intermediate to Inter	mediate, Stude	ents Book,
	Cambridge University Press, 2008. , 1997.	·	<u></u>
2.	Dutt, Rajeevan, Prakash .A Course in Communication Skills (Ar	ina University,	Combatore
	edition) :. Cambridge University Press India Pvt.Ltd, 2007.		
3.	Meenakshi Kaman and Sangeeta Sharma-Technical Communica	tion English S	Kills for Engineers';
A	OXIOR UNIVERSITY PRESS, 2008.	f Coiceas and	Enginageing Origet
4.	S.r. Dhanavel, English and Communication Skins for Students (Blackswap Pyt 1 td 2000	n science and	Engineering, Orient
5	Technical English – L& II. Sonaversity. Sona College of Techno	logy Salem F	First Edition 2012
J.	i connear English i te ii, sonaversity, sona conege of reenno	nogy, baiem, i	115t Lattion, 2012.

E-Resourc	es
1.	http://www.kalevleetaru.com/Publish/Book Review Who Moved My Cheese.pdf
2.	http://www.bookbrowse.com/reviews/index.cfm/book number/304/who-moved-my-cheese
3.	http://www.imdb.com/title/tt0482629/plotsummary

			VIVE	KANA (Auton	NDHA omous l Ela	COLI Institution Iyampal	L EGE on, Affil ayam, T	OF EN liated to Firucher	Anna Gine Anna Gode –	E ERIN Univer 637 20	N G FOR V sity, Chenn)5	WOMEN ai)			TÜVRheinland CERTIFIED		
Pro	ogramme	e B. 7	TECH				Pr	ogram	me Co	ode	104	Regula	ation		2	023	
De	partmen	t Inf	ormati	ion Te	chnolo	ogy						Seme	ester			II	
(Course		(Course	Name			Perio	ods Pe	r	Credit		M	aximun	n Ma	rks	
	Code							W	reek	D	C	CA		ECE		Total	
U2	23CH202	2 Ch	emist	rv La	borate	orv ^{\$}		L 0	0	2	1	60		<u>40</u>		100	
(0 Co Ou	Course bjective ourse itcome	The The CO bas CO CO pot CO and	 main G m La St In G Cu e studen e studen 1: Infee e and i 2: Iden 3: Spoention 4: Esti 5: Det 	object: ather k ixture earn pl udy th fer iro ather k ollect o ndersta nts wh er know dentify the c etric n mate I ermine fy alka	ive of t mowle with b H and j e redo n form cnowle data rea and alk o comp vledge v the con oncent nethod ron by e hardm	his co dge ab ase. potenti x react s com dge or quired alinity olete th on net oncent ration comp tess an and av	urse is pout ba al of h ion the plex we harder for dis <u>7 and a</u> nis cou utralizer rations ion of of san lexatic ailable	a to: asic sir asic sir asic sir rough rith thi aess pr ssolve availab arse su ation r s. sampl ple so on reac olved of e chlor	nple a en in a potent ocyan oducin d oxyg <u>le chlo</u> ccessf eactio <u>e usin</u> olution ction s	cid-ba a sam ial di ate. ng sal gen pi orine fully a n bet g pH. a throu pectro n pres esent	ase reaction ple solution fference. ts and reme resent in very present in very present in very present in very present in very ween acid	ons and s on. noval of water sar water sar d to: l, acid m reaction ly. mestic w yen samp	hardn nple. ample ixture n by vater su	ess throws with	bhanis bugh Kno	estimation wledge Le K3 K3 K4 K4 K4	vvel
Pre-	-requisit	es	Nil			CO/	PO M	apping	5					CC	D/PSC) Mapping	_
	60	(3/	2/1 indi	cates st	trength	of corr	elation) 3-Str	ong, 2	- Mec	lium, 1 - V	Veak					
	COs					Prog	ramme	Outco:	mes (P	Os)					Р	SOs	_
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO7	PO8	РО	9 PO 10	PO 11	PO12	PS	501	PSO 2	
	CO 1	3	3		2	2	1	1							2	2	
	CO 2	3	3		2	2	2	2							2	1	
	CO 3	3	3		2	2	1								1	2	_
	CO 4	3	3	1	2	2	1								2	2	_
	05	2	3	1	2		2	3							2	2	
Co	urse Ass	essmei	nt Met	hods													
D	virect 1. Pr 2. E: 3. E: mdirect C	re lab a xecutiond sem	and Pos on of E lester e end su	st lab T xperim xamin irvey	Sest Sent an Sent ation	d Viva	a-voce										
Co	ntent of	the syl	labus														

S.No	Name of the Experiment	Course Outcome
1.	Estimation of HCl using NaOH by Conductometric titration	CO1
2.	Estimation of Mixture of acid [standard HCl+ unknown CH ₃ COOH] using NaOH by Conductometric titration.	CO1
3.	Estimation of Barium Chloride using sodium sulphate by Conductometric precipitation titration	CO1
4.	Determination of HCl using NaOH by pH metry	CO2
5.	Estimation of Ferrous iron by Potentiometric titration	CO3
6.	Estimation of Ferric ion by Spectrophotometry	CO4
7.	Determination of Total, Temporary and Permanent hardness of water by EDTA method.	CO5
8.	Estimation of Dissolved Oxygen content in water by Winkler's method	CO5
9.	Estimation of Alkalinity in water sample.	CO5
10.	Estimation of available Chlorine in bleaching powder.	CO5
	Total Periods	30
Lab Manua	ls suggested:	
1 Chen	nistry laboratory I & II by Dr.A.Ravikrishnan,Sri Krishna Pub,Revised Edition-	-2017
2 Chen	nistry laboratory Manual by Dr.Veeraiyan, Revised Edition-2017	

	A DAY AND A DAY		VIVE (A	KANA utonon	. NDH nous Ii Ela	A COL nstitutio yampal	LEGE on, Affi ayam, 7	COFE	NGIN to Anr engode	EERIN na Unive e – 637 2	G FOR ersity, C 205	WOM hennai)	IEN		ISO 9001:2015 ISO 9001:2015 einland ISO 9001:2015 FED ISO 9001:2015
Program	me	B.Te	ch.			F	rogran	nme Co	de 1	04	Regula	ation			2023
Departm	ent	Infor	matior	n Tech	nology	7					Semes	ter			II
<u> </u>	1. J.	C	NT	_				Period	s Per	Week	(Credit		Maxin	um Marks
Course C	oae	Cours	se nam	e				L	Т	Р	С	(CA	ESE	Total
U23GE20	04	Engi Labo	neerin orator	ig Pra y*	ctices			0	0	3	1	(50	40	100
Course Objective	2	 The main objective of this course is to: The students should made to 1. Know the plumbing line assemblies. 2. Weld lap joint, butt joint and T-joint. 3. Learn the assembling and dismantling methodology of home appliances. 4. Learn the resistor value identification through colors coated on resistor. 5. Learn the basics of signal generation in CRO. 6. Learn the soldering techniques in PCB board for designing the projects 													
		At th	e end o	of the co	ourse,	the stu	dent sh	ould be	able	to,	ing the	projects		ŀ	Knowledge Level
G		At the end of the course, the student should be able to,Knowledge LevelCO1: Perform basic machining operations and finish the job to the requirements and quantify the accuracy.K2CO2: Make various joints such as cross lap joint and Tee lap joint in the carpentry.K2													
Outcome	C	CO ₂ :	: Make	various	s joint	s such a	as cross	lap joi	nt and	l Tee lap	o joint ir	n the ca	rpentry		K2
Outcome	5	CO3 basic	Under	stand t cal qua	he bas ntities	ics of l	iouse w	viring to	echniq	ues and	the mea	sureme	ents of		K2
		CO4:	Under	stand t	he resi	stor va	lue ider	ntificati	ion th	ough co	lors coa	ited on	resistor		K2
		CO5:	Under	stand t	he solo	dering t	echniq	ues in I	PCB b	oard for	designi	ng the j	projects	5.	K2
Pre -requ	isites	Nil													
		(3/2/	1 indic	ates str	ength	CO / of corre	PO Ma elation)	apping 3-Stro	ng, 2	– Mediu	ım, 1 - V	Veak		CO/ Map	PSO ping
						Progra	amme (Dutcom	es (PO	Os)				PS	Os
	COs	РО	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PSO	PSO
		1	2	3	4	5	6	7	8	9	10	11	12	1	2
	CO 1	3	2	3	2	2	-	-	-	2	-	-	-	2	2
	CO 2	3	2	3	2	2	-	-	-	2	-	-	-	3	2
	CO 3	3	2	2	3	2	2	-	-	2	-	-	-	2	-
	CO 4	3	2	2	3	2	2	-	-	2	-	-	-	2	-
	CO 5	3	2	3	3	2	2	-	-	2	-	-	-	3	3
Course	Assess	ment	Metho	ods											
Direct															
1.Pre lab 2.Record	and Pos mark	t lab													
3.End-Se	mester I	Examir	nations												
Indirect															

Content of the Syllabus	
GROUP A	
(CIVIL & MECHANICAL ENGINEERING)	
CIVIL ENGINEERING PRACTICE:	COs
1.Plumbing:	
a) Single Tap G.I / PVC pipe connection involving the fitting like valves, taps & bends.	CO2
b) Two Tap G.I / PVC pipe connection involving the fitting like valves, taps & bends.	
2.Carpentry:	GOO
a) To make a Cross Lap Joint from the given work piece.	CO2
MECHANICAL ENCINEEDING DDACTICE.	
MECHANICAL ENGINEERING FRACTICE:	
3.Welding:	001
a) To join the metal plates by a Butt Joint in arc welding machine. b) To join the metal plates by a L an Joint in arc welding machine	COI
4 Pasia Mashining:	
a) To perform simple facing & turning operation	CO1
b) To perform of step turning operation	001
5 Sheet Metal:	
a) To make a rectangular trav from the given sheet metal.	CO1
b) To make a basket from the given sheet metal.	
STUDY EXPERIMENT:	
6. Study of 3D Printing machine and its applications.	CO1
7. Study of CO2 Laser engraving & cutting machine and its applications.	COI
8. Study of Wood routing machine and its applications.	
$\frac{GROUPB}{GROUPB}$	
<u>(ELECTRICAL & ELECTRONICS ENGINEERING)</u> ELECTRICAL ENGINEERING PRACTICE	
1. Residential house wiring and stair case wiring using switches, fuse, indicator & lamp.	CO3
2. LED lamp assembly.	CO3
3. Measurement of voltage, current, power & power factor using R-Load.	CO3
4. Measurement of energy using single phase meter.	CO3
5. Measurement of resistance to earth of electrical equipment.	CO3
ELECTRONICS ENGINEERING PRACTICE	
1. Study of Electronic components and equipment's – Resistor color-coding, Inductor, Capacitor and CRO.	CO4
2. Logic gates AND, OR, NOR, NAND and NOT.	CO4
3. Generation of Clock Signal.	CO4
4. Soldering practice – Components Devices and Circuits – Using general purpose PCB.	CO5
Total Periods	45
Reference Book :	D 1''
1. Dr.P.Kannan, Mr.T.Satheeskumar & Mr.K.Rajasekar, "Engineering Practices Laboratory" Manual. First 2017.	Edition,
2. Mr.T.Jeyapoovan, Mr.M.Saravana Pandian, "Engineering Practices Lab" Manual, Vikas Publishing Hou Ltd, 2017.	se Pvt

		VIV	EKA (Autor	NAND nomou E	PHA C s Instit Elayam	OLLE ution, palaya	C GE O Affilia m, Tir	F ENC ted to A ucheng	SINEE Anna U ode – (RIN(Univer 537 20	G FO sity, C)5	R WOI Chenna	MEN i)	TÚVRheinland GERTIFIED	150 9001-2015
Progra	mme	B.	Tech.				Pro	gramn	ne Cod	e 1	04	Regu	lation	2	023
Depart	ment	Info	rmatio	n Tech	nology	(IT)						Ser	nester		II
Course (Code		Co	urse N	ame		Perio	ds Per	Week P	Cro	edit	C	Maxim A	um Mai ESE	:ks Total
U23MC	FY2	Ind	ian Co	onstit	ution ^{\$}		2	0	0)	10	00	NA	100
Course Objectiv	e	The	main c i) Kr ii) Kr iii) Kr iv) Le con v) Kr	objectiv now ab now ab now ab arn the nstitution ab	ve of the out the out out out out e elect on. out the	his cou e basic r centra r state tion sy e specia	rse is t structu al gove govern vstem, al cons	o: re of In rnmen ment e amend titution	ndian c t execu xecutiv ments al prov	onstit tive s ve sys and vision	ution. ystem tem o emerg s in In	of Ind f India gency p dia	ia provisio	ns give	n by the
		At th	ne end	of the	course	, the st	udent s	should	be able	e to,				Kno	wledge
			• Un	Idersta	nd the	functio	ons of t	he Ind	an gov	vernm	ent			level	K1
Course			• Kn	now ab	out ou	r Centr	al Gov	ernme	nt, poli	tical s	tructu	ire & c	odes,		K1
Outcom			• Un	Idersta	nd our	State 1	Execut	ive & I	Election	ns sys	tem o	f India.		K1	
			• Re Pro	memb ovision	er the l is give	Electio n by th	n syste e cons	em, An titution	endme	ents ar	nd Em	ergenc	У		K2
			• Un	Idersta	nd our	Specia	al Cons	titutio	nal Pro	visior	s in I	ndia			K2
Pre- reauisite	s														
(3	/2/1 in	dicate	s stren	(igth of	CO / P correla	O Ma ation) 3	pping 3-Stron	ng, 2 – 1	Mediu	m, 1 -	Weal	K	CO/P	SO Maj	pping
COs				P	rogran	nme O	utcome	es (POs)			1 -	PSOs		
	P O 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO	2
CO 1						3		3	2						—
CO 2						3		3	3						
CO 3						3		3	2						
CO4						3		3	3						
0.05				l		5		5	5						
Course A Direct 1. 2. Indirect 1.	Assess Conti Assig t Cours	ment nuous nment e - enc	Metho Assess	y	Test I,	II & II	I								

Content o	f the	syllabus		
Unit –	I	INTRODUCTION	Periods	6
Historical Remedies	Back for ci	ground – Constituent Assembly of India – Fundamental Right tizens	s – Citizenship	– Constitutional
Unit - I	Ι	STRUCTURE AND FUNCTION OF CENTRAL	Periods	6
Union Gov Minister –	vernn Cabi	nent – Structures of the Union Government and Functions – Pre net – Parliament – Supreme Court of India	esident – Vice I	President – Prime
Unit – I	II	STRUCTURE AND FUCTION OF STATE	Periods	6
State Gov Judicial Sy	ernm /stem	ent – Structure and Functions – Governor – Chief Minister in States – High Courts and other Subordinate Courts	– Cabinet – St	ate Legislature –
Unit - F	V	ELECTION PROVISIONS, EMERGENCY PROVISIONS, AMENDMENT OF THE CONSTITUTION	Periods	6
Election C grounds, p limitations	omm rocec	ission of India-composition, powers and functions and electoralure, duration and effects. Amendment of the constitution- mea	ll process. Type ning, procedur	es of emergency- e and
Unit – V	V	SPECIAL CONSTITUTIONAL PROVISIONS	Periods	6
Directive I Schedule (Princi Caste	ples of State Policy: Importance and its relevance. Special Cor s, Schedule Tribes & Other Backward Classes, Women & Chil	nstitutional Prov dren.	visions for
]	Sotal Periods	30
Text Book	KS			
1.	Du	ga Das Basu, "Introduction to the Constitution of India ", Pren	tice Hall of Inc	lia, New Delhi.
2.	The (20	e Constitution of India (Coat Pocket Edition) by Gopal Sankara 24)	narayanan - 17	th Edition.
Reference	es			
1.	R.C	C.Agarwal, (1997) "Indian Political System", S.Chand and Con	npany, New De	lhi.
2.	M.I	aksmikanth, Indian polity, Tata mchraw hill publications.		
E-Resour	ces			
1.	httr	os://mhrd.gov.in/		
2.	httr	s://niti.gov.in/content/niti-aayog-library		
3.	ww	w.drishtiias.com/		

SEMESTER –III

*	9		V	VIVEKA (A	NAND autonomo	HA CO us Institu Elayamp	LLEGE ation, Affi alayam, T	OF EN liated to Firuchen	MGINE Anna U Igode –	ERING Jniversit 637 205	FOR V y, Chenna	VOM ai)	EN	TÜVEhtiria	150 9901:2015
	Program	me	B.Tech	1				Prog	gramm	e Code	104	Re	egulation	n	2023
	Departm	ent	INFO	RMAT	ION TI	ECHNO	DLOGY	<u> </u>					Semeste	er	III
C	ourse Co	de		Co	urse Na	ime		Pe	eriods Weeł	Per	Credit		Max	ximum M	larks
								L	Т	Р	С		CA	ESE	Total
U	23MA3	04	DISCH	RETE N	MATH	EMAT	ICS	3	1	0	4		40	60	100
Ca	ourse bjective		At the o	Introd Provic of infe Recog Identi Recog	bjective bluce bas de infor erence. gnize the fy the d gnize the he cours	e conne omain a e conce e, the st	and tec about th ction be and rang pts of gr udent sh	to thnique thnique conc tween ge of a roups.	es in D cepts n set, op relation e able	iscrete eeded t peration n. to,	Mathen o test th as and lo	natica le log ogic.	ll Structi ic of a p	ure. program a Knowlec	nd Theory
Co	ourse		CO1: [Demons	trate the	e mathe	matical	reason	ing an	d logic	<u>s</u>				K2
0	utcome		<u>CO2: I</u>	Reform	ulate sta	itement	s from c		n lang	uage to	tormal	langı	uage		K5
			CO3: H	Posses k	nowled	ge in rel	ations a	nd latti	ces.	• ,	<u> </u>				K3
			<u>CO4: S</u>	Solve re	currenc	e relati	ons by a	applyin	ig appi	opriate	functio	n.			<u>K5</u>
D	_		005:1	Jndersta	and the	concepts	s various	s algeb	raic St	ructure	s.				K3
Pr ro	e- anisitas		-												
10	quisites														
1						(\mathbf{n})	Mann	ina							
		($\frac{3}{2}/\frac{1}{1}$ ind	iontos st	rongth o	CO/Po	tion) 3	Strong	2 Ma	dium 1	Wook			LU/PSU	
	COs	(3/2/1 ind	icates st	rength o	f correla Program	tion) 3-S	Strong,	$\frac{2 - Me}{POs}$	dium, 1	- Weak		N	Mapping	
	COs	(3/2/1 ind	PO 3	rength o	f correla Program	$\frac{1}{100}$ $\frac{1}$	Strong, comes (2 – Me POs)	dium, 1	- Weak	PO	PO I	20/PSO Mapping 2SOs 2SO PSO	PSO
	COs	(PO	3/2/1 ind	icates st	PO 4	f correla Progran	nme Outo PO 6	Strong, comes (PO 7	2 – Me POs) PO 8	dium, 1	- Weak PO 10	PO 11	PO H 12 1	CO/PSOMappingPSOsPSOPSO2	PSO 3
	COs	(PO 3	3/2/1 ind 1 PO 2 2	PO 3	PO 4	f correla Program PO 5	PO 6	Strong, comes (PO 7	2 – Me POs) PO 8	dium, 1	- Weak PO 10	PO 11	PO H 12 1 22	COPSO Mapping PSOs PSO 2 1	PSO 3
	COs <u>CO 1</u> <u>CO 2</u> <u>CO 3</u>	(PO 3 3 3	3/2/1 ind PO 2 2 2 2	PO 3	PO 4 1 1	f correla Program PO 5	PO 6	Strong, comes (PO 7	2 – Me POs) PO 8	dium, 1	- Weak PO 10	PO 11	PO H 12 1 22	CO/PSO Mapping PSOs PSO 2 2 1 2 1 2 1	PSO 3
	COs CO1 CO2 CO3 CO4	(PO 3 3 3 3 3	3/2/1 ind PO 2 2 2 2 2 2	PO 3 1 1 1 1	rength o PO 4 1 1 1	f correla Program PO 5	PO 6	Strong, comes (PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak PO 10	PO 11	PO I 12 1 2 2 2 2 2 2 2	Mapping PSO PSO 2 1 2 1 2 1 2 1 2 1	PSO 3
	COs CO 1 CO 2 CO 3 CO 4 CO 5	(PO 3 3 3 3 3 3	3/2/1 ind PO 2 2 2 2 2 2 2 2	PO 3 1 1 1 1 1 1 1	PO 4 1 1 1 1 1 1 1 1	f correla Program PO 5 1 1 1 1	PO 6	Strong, comes (PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak	PO 11	PO H 12 1 22 22 22 22 22 22 22 22	Mapping PSOs	PSO 3
Ca	COs CO 1 CO 2 CO 3 CO 4 CO 5 Durse Ass	(PO 3 3 3 3 3 3 3 3 Sessin	3/2/1 ind PO 2 2 2 2 2 2 2 2 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	PO 3 1 1 1 1 1 1 thods	PO 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	rogran Progran PO 5 1 1 1	PO 6	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak	PO 11	PO H 12 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Mapping PSOs PSOs 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	PSO 3
Ca	COs CO 1 CO 2 CO 3 CO 4 CO 5	(PO 3 3 3 3 3 3 Sessin	3/2/1 ind PO 2 2 2 2 2 2 2 2 nent Me	PO 3 1 1 1 1 1 1 thods	rength o PO 4 1 1 1 1 1	rogran Progran PO 5 1 1 1 1	PO 6	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak PO 10	PO 11	PO H 12 1 22 22 22 22 22	Mapping PSOs PSOs 2 1 2 1 2 1 2 1 2 1 2 1	PSO 3
Ca	COs CO 1 CO 2 CO 3 CO 4 CO 5 Durse Ass Direct 1. C	(PO 3 3 3 3 3 3 3 3 5 sessm	3/2/1 ind PO 2 2 2 2 2 2 2 1 2 1 1 1 1 1 2 2 2 2 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	PO 3 1 1 1 1 1 thods	rength o PO 4 1 1 1 1 1 1 1 nt Test I	rogran Progran PO 5 1 1 1 1 1	I	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak PO 10	PO 11	PO H 12 1 22 22 22 22 22 22	Mapping PSO PSO 2 2 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	PSO 3
Ca	COs CO 1 CO 2 CO 3 CO 4 CO 5 Direct 1. C 2. A	(PO 3 3 3 3 3 3 3 3 3 3 5 eessm	3/2/1 ind PO 2 2 2 2 2 2 2 nent Me nuous As ment.	PO 3 1 1 1 1 1 1 thods	rength o PO 4 1 1 1 1 1 1 1 1	r, II & II	I	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak	PO 11	PO H 12 1 22 22 22 22 22	Mapping PSOs PSOs PSO 2 1 2 1 2 1 2 1 2 1 2 1 2 1	PSO 3
Ca	COs CO1 CO2 CO3 CO4 CO5 Direct 1. C 2. A 3. E	(PO 3 3 3 3 3 3 3 3 3 3 3 3 5 sessen Contin ssign nd-S	3/2/1 ind PO 2 2 2 2 2 2 2 nent Me nuous As ment. emester	PO 3 1 1 1 1 1 1 thods examina	rength o PO 4 1 1 1 1 1 1 nt Test I ations	rogran Progran PO 5 1 1 1 1 1	PO 6	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak	PO 11	PO H 12 1 22 22 22 22	Mapping PSOs PSOs PSO 2 1 2 1 2 1 2 1 2 1	
Ca	COs CO 1 CO 2 CO 3 CO 4 CO 5 Direct 1. CC 2. A 3. E ndirect 1. CC	(PO 3 3 3 3 3 3 3 3 3 3 3 5 esssm ontin ssign nd-S	3/2/1 ind 1 PO 2 2 2 2 2 2 2 2 2 2 2 1 PO 2 2 2 1 Po 2 2 2 2 2 1 Po 2 1 Po 2 2 Po 2 1 Po 2	PO 3 1 1 1 1 1 1 thods ssessmen examina	rength o PO 4 1 1 1 1 1 1 1 nt Test I ations	rogran Progran PO 5 1 1 1 1	I	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak PO 10	PO 11	PO H 12 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Mapping PSOs PSOs PSO 2 1 2 1 2 1 2 1 2 1	
	COs CO 1 CO 2 CO 3 CO 4 CO 5 Direct 1. C 2. A 3. E ndirect 1.	(PO 3 3 3 3 3 3 3 3 3 3 3 3 3 3 5 8 8 8 8 8	3/2/1 ind 1 PO 2 2 2 2 2 2 2 2 2 2 2 2 2 anent Me nuous Assument. emester e - end state	PO 3 1 1 1 1 1 1 thods examina urvey	rength o	rogran Progran PO 5 1 1 1 1 1	I	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak	PO 11	PO H 12 1 2 2 2 2 2 2 2 2	Mapping PSOs PSOs PSO 2 1 2 1 2 1 2 1 2 1 2 1 2 1	PSO 3
	COs CO 1 CO 2 CO 3 CO 4 CO 5 Direct 1. CC 2. A 3. E ndirect 1. CC 2. A 3. E	(PO 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3/2/1 ind PO 2 2 2 2 2 2 2 2 2 2 2 2 2 2	PO 3 1 1 1 1 1 1 1 thods examina urvey DUS	rength o	rogran Progran PO 5 1 1 1 1 1	II	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak	PO 11	PO I 12 1 22 22 22 22 22 22 22 22 22 2	Mapping PSOs PSOs PSO 2 1 2 1 2 1 2 1 2 1	
	COs CO 1 CO 2 CO 3 CO 4 CO 5 Direct 1. C 2. A 3. E ndirect 1. C 2. A 3. E ndirect 0. C 0. C	(PO 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3/2/1 ind 1 PO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 annons Assessment. Presenter e - end si PROP	PO 3 1 1 1 1 1 1 1 thods seessmen examina urvey DUS OSITIC	rength o PO 4 1 1 1 1 1 1 1 nt Test I ations ONAL	rogran Progran PO 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ULUS	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak PO 10	PO 11	PO H 12 1 22 22 22 22 22 22 22 22 22 22 22 22 22	Mapping PSOs PSOs PSO 2 1 2 1 2 1 2 1 2 1	PSO 3
Ca II Ca	COs CO 1 CO 2 CO 3 CO 4 CO 5 Direct 1. C 2. A 3. E ndirect 1. C Dontent C Unit – I ropositio	(PO 3 3 3 3 3 3 3 3 3 3 3 3 3	3/2/1 ind PO 2 2 2 2 2 2 2 2 2 2 2 2 2 2	icates st PO 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	PO 4 1 1 1 1 1 1 nt Test I ations ONAL tives – 0	rogran Progran PO 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ULUS und prop	PO 7	2 – Me POs) PO 8	dium, 1	- Weak	PO 11	PO II 12 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	PSO PSO PSO PSO PSO PSO PSO PSO PSO PSO	PSO 3
Co II Pr tab	COs CO 1 CO 2 CO 3 CO 4 CO 5 Direct 1. CC 2. A 3. E ndirect 1. CC Direct 1. CC 2. A 3. E ndirect 1. CC 2. A 3. E 1. CC 2. A 3. E 1. CC 2. A 3. E 1. CC 2. A 3. E 0 0 0 0 0 0 0 0 0 0 0 0 0	(PO 3 3 3 3 3 3 3 3 3 3 3 3 3	3/2/1 ind PO 2 2 2 2 2 2 2 2 2 2 2 2 2 2	PO 3 1 1 1 1 1 1 1 1 thods ssessmer examina urvey OUS OSITIC	PO 4 1 1 1 1 1 1 1 1 1 1 1 1 1	rogran Progran PO 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ULUS und proj ntraposi	PO 7	2 – Me POs) PO 8	dium, 1 PO 9	- Weak	PO 11	PO I 12 1 2 2 2 2 2 2 2 2 2 2 2 2 2	PSO PSO 2 PSO PSO 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	PSO 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Co I Pri tati La	COs CO 1 CO 2 CO 3 CO 4 CO 5 Direct 1. CC 2. A 3. E ndirect 1. C 2. A 3. E ndirect 1. C 2. A 3. E ndirect 1. C 2. A 3. E ndirect 0 0 0 0 0 0 0 0 0 0 0 0 0	(PO 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3/2/1 ind I PO 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 and the second state of	PO 3 1 1 1 1 1 1 1 1 thods seessmen examina urvey DUS OSITIC connec d contr - Print	PO 4 1 1 1 1 1 1 1 1 1 0 1 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	rogran Progran PO 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ULUS und proj ntraposi ve norr	position position position particular provide	2 – Me POs) PO 8	Dindition al equir Prosection	- Weak	PO 11 Po bicon s and juncti	PO I 12 1 2 2 2 2 2 2 2 2 2 2 2 2 2	PSO Mapping PSOs PSO 2 1 1 2 1 1 2 1 1 2 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	PSO 3

Unit - II	PREDICATE CALCULUS	Periods	9+3
Predicates -	Statement function - Variables - Free and bound variables - Quan	tifiers – Univ	erse of discourse -
Logical equ	ivalences and implications for quantified statements - Theory of	inference –	Rules of universal
specification	and generalization – Validity of arguments.		
Unit – III	SET THEORY	Periods	9+3
Set Theory	: Cartesian product of sets - Relations on sets - Types of relation	ns and their p	oroperties - Matrix
representatio	on of a relation - Graph of a relation – Equivalence relations – Partial	ordering – Pos	et – Hasse diagram
– Lattices –	Properties of lattices.		
Unit - IV	FUNCTIONS	Periods	9+3
Definition –	Classification of functions – Composition of functions – Inverse fun	nctions – Cha	racteristic function
of a se	t – Recurrence relations – Solution of recurrence	e relations	– Generating
Functions –	Solving recurrence relation by generating functions.		
Unit – V	GROUP THEORY	Periods	9+3
Algebraic sy	stems – Definitions – Examples – Properties – Semi groups – Mon	oids – Sub se	mi groups and Sub
monoids - G	roups and Subgroups – Homomorphism – Cosets – Lagrange's theore	em – Normal s	ubgroups – Normal
algebraic sys	stem with two binary operations.		
	·	Fotal Periods	45+15=60
Text Books		•.1 • 1•	
1.	Science, TMH, New Delhi – 2008.	with Applica	tions to Computer
2	Rosen K H, "Discrete Mathematics and its Applications", Sixth Ed	ition, Tata Mo	Graw-Hill Pub.co.
2.	Ltd., Delhi, 2006.		
References			
1.	Kenneth H. Rosen, "Discrete Mathematics and its Applications", Publishing Company, 2012	7 th Edition, '	Tata McGraw Hill
2.	Singh S.B., Jai Kishore and Ekata, "Discrete Structures", 3 rd Edition, 2017	Khanna Book	Publishing, Delhi,
3.	Seymour Lipschutz, Marclars Lipson, "Discrete Mathematics", Tata M	cGraw Hill.,N	ew Delhi.
4.	Bernard Kolman, Robert Busby, Sharon C.Ross," Discrete Mat	hematical Str	uctures", Pearson
	Education, Delhi, 6 th Edition, 2015.		
5.	D.S.Malik, "Discrete Mathematical Structures Theory as	nd Applicat	ions", Thomson
	Publishers, 2004.		
E-Resources	۱ <u>ــــــــــــــــــــــــــــــــــــ</u>		
1.	https://en.wikipedia.org > wiki > Discrete_mathematics		
2.	www.learnerstv.com/Free-engineering-Video-lectures		
3.	www.nptel.ac.in		

	VIVEKANAN (Autono	NDHA COLL mous Institution Elayampala	EGE O n, Affiliat yam, Tirt	F EN(ted to A ucheng	GINEE Anna Un ode – 63	RING F niversity ,0 37 205	OR WOME Chennai)	N	TRVNersand CONSCIENCES	1011 0.240 2011 0.245 0.255 0.
Programme	B.E / B.Tech.		Progr	amme	Code		Regulation	2	023	
Department	CSE & IT						Seme	ester I	II / IV	
Course Code	Course Name		Period	s Per V T	Veek P	Credit	Maximum	Marks	SE	Total
U23IT301	Digital System	ns Design	3	0	0	3	40		60	100
Course Objective	The Main Object • Underst minimiz • Underst • Underst • Underst • Learn b logic.	and common vation using Ka and the concept and the concept and the concept and the concept and the concept and the concept asic of digital	irse is to forms arnaugh ots of co ots of sec ots of As l memor	of nu Map. mbina quentia ynchr ies an	mber 1 tional le al logic onous s d fund	represent ogic circu circuits. sequentia amental	ation, Boole uits. l circuits. concepts use	an law	s and lo	ogic
Course Outcome	At the end of the CO1:Realize the logic minimizati CO2: Analyze a CO3:Analyze a CO4: Understa sequential circui	e course, the st e number repre- tion using K Ma and Reproduce nd Reproduce nd the analysi its.	esentatio aps. the com sequenti s and d	ould b on, Dif <u>ibinational logi</u> esign	be able ferent f onal log ic circu procedu	to, forms of l gic circui its. ures for	Boolean law ts. asynchronou	and s	Know le K2 K3 K3 K3	vledge vel
Dro roquisitos	CO5: Character	ize Boolean fu	inctions	using	progran	nmable l	ogics.		K2	
COs PO1 C01 3 C02 3 C03 3 C04 3 C05 2	3/2/1 indicatesstreng - PO 2 PO 3 PO 3 2 2 2 3 2 2 2 2 2 2 1	CO /POMaj gthofcorrelation) Programme D 4 PO 5 PO 4 PO 5 PO 1 1	pping)3-Strong eOutcom 6 PO 7	g,2–Me es(POs PO 8	dium, 1–) PO 9 1 1	-Weak	PO 11 PO 12	CO Ma 9801 3 3 2 3 2 2	/PSO pping PSOs 2 2 2 2 2 2 1 1	2
Course Assessme Direct 1. Continu 2. Assignt 3. End-Set Indirect 1. Course Content of the sy Unit – I	ent Methods nous Assessment T nent / Quiz / Semin mester examination - end survey /llabus Number Syste Techniques	est I, II & III nar n ms, Boolean	Algebr	a an	d Min	imizatio	n Peri	iods		9

Number S	Systems & Boolean Algebra: Number systems review: Decimal-Binar	y– Octal– Hexade	cimal, 1s and 2s
Compleme	ents, Boolean postulates and laws – De-Morgan's theorem – Principle of	Duality.	
Logic Gat	tes & Minimization of Boolean functions: Logic Gates – Universal Ga	tes - Karnaugh ma	ap minimization:
Three, Fou	r variables with Don't Care Entries -Implementations of logic functions	using logic gates.	
Unit - II	Combinational Logic Circuits	Periods	9
Half Adde	r – Full Adder – Half Subtractor – Full Subtractor - Magnitude Compara	tor: 2 bit– Code C	Conversion: Gray
to Binary,	Binary to Gray, Binary to BCD, BCD to Excess 3 code, BCD to Gray, 1	Binary to Excess 3	3 code definition
– Multiple	xers, Demultiplexers– Encoders, Decoders – Parity checker and generate	or	
Unit – III	Sequential Logic Circuits	Periods	9
Basic Arch	nitectural Distinctions between Combinational and Sequential circuits -	Latch – Definitio	ons of Level and
Edge trigg	ering – Flip flops: SR, JK, D and T – Counters: up counter, down counte	er, up-down counte	er, ripple counter
- Registers	s: Shift registers, Universal shift register		
Unit - IV	Asynchronous Sequential Logics	Periods	9
Analysis and	nd Design Procedure of Asynchronous Sequential Circuits — Reduction	of State and Primi	tive Flow Tables
Race-fr	ee State Assignment — Hazards: Static Hazard, Dynamic Hazard, Esser	ntial Hazard.	
Unit – V	Memory and Programmable Devices	Periods	9
Introductio	on to basic memories: ROM - PROM - EPROM - EEPROM, RA	M: Static and d	ynamic RAM –
Programm	able Logic Array (PLA) – Programmable Array Logic (PAL) – Field Pr	ogrammable Gate	e Arrays (FPGA)
- Characte	ristics of Digital integrated circuits: propagation delay, fan-out and fan-i	n.	
	Tota	al Periods	45
Text Book	Tota	al Periods	45
Text Book	Tota ss: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021.	al Periods	45 erilog HDL,
Text Book	Tota s: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design",6th Edition, Thomson	al Periods	45 erilog HDL,
Text Book 1. 2. REFEREN	Tota ss: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design",6th Edition, Thomson NCE BOOKS:	al Periods Oduction to the Ve on Learning, 2013	45 erilog HDL,
Text Book 1. 2. REFEREN 1.	Tota ss: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design",6th Edition, Thomson NCE BOOKS: Digital Electronics - A Conceptual Approach [Print Replica] Kindle Edition by D.A.GodseA.P.Godse, 2014	al Periods oduction to the Ve on Learning, 2013 dition, Technical H	45 crilog HDL,
Text Book 1. 2. REFEREN 1. 2.	Tota ss: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design",6th Edition, Thomson NCE BOOKS: Digital Electronics - A Conceptual Approach [Print Replica] Kindle Edition by D.A.GodseA.P.Godse, 2014 G. K. Kharate, Digital Electronics, Oxford University Press, 2010	al Periods oduction to the Ve on Learning, 2013 dition, Technical H	45 erilog HDL, Publication
Text Book 1. 2. REFEREN 1. 2. 3.	Tota ss: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design",6th Edition, Thomson NCE BOOKS: Digital Electronics - A Conceptual Approach [Print Replica] Kindle Edition by D.A.GodseA.P.Godse, 2014 G. K. Kharate, Digital Electronics, Oxford University Press, 2010 John F. Wakerly, Digital Design Principles and Practices, Fifth Edition	al Periods oduction to the Ve on Learning, 2013 dition, Technical H	45 crilog HDL, Publication on, 2017.
Text Book 1. 2. REFEREN 1. 2. 3. 4.	Tota ss: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design",6th Edition, Thomson NCE BOOKS: Digital Electronics - A Conceptual Approach [Print Replica] Kindle Edition by D.A.GodseA.P.Godse, 2014 G. K. Kharate, Digital Electronics, Oxford University Press, 2010 John F. Wakerly, Digital Design Principles and Practices, Fifth Edition Charles H. Roth Jr, Larry L. Kinney, Fundamentals of Logic Design Learning, 2013	al Periods oduction to the Ve on Learning, 2013 dition, Technical H n, Pearson Educati n, Sixth Edition, G	45 crilog HDL, Publication on, 2017. CENGAGE
Text Book 1. 2. REFEREN 1. 2. 3. 4. E-Resourt	Tota ss: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design",6th Edition, Thomson NCE BOOKS: Digital Electronics - A Conceptual Approach [Print Replica] Kindle Edition by D.A.GodseA.P.Godse, 2014 G. K. Kharate, Digital Electronics, Oxford University Press, 2010 John F. Wakerly, Digital Design Principles and Practices, Fifth Edition Charles H. Roth Jr, Larry L. Kinney, Fundamentals of Logic Design Learning, 2013 rces:	al Periods oduction to the Ve on Learning, 2013 dition, Technical H n, Pearson Educati n, Sixth Edition, G	45 erilog HDL, Publication on, 2017. CENGAGE
Text Book 1. 2. REFEREN 1. 2. 3. 4. E-Resour 1.	Tota Signification M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Introver VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design", 6th Edition, Thomson NCE BOOKS: Digital Electronics - A Conceptual Approach [Print Replica] Kindle Editor by D.A.GodseA.P.Godse, 2014 G. K. Kharate, Digital Electronics, Oxford University Press, 2010 John F. Wakerly, Digital Design Principles and Practices, Fifth Edition Charles H. Roth Jr, Larry L. Kinney, Fundamentals of Logic Design Learning, 2013 Tces: https://byjus.com/gate/sequential- circuitsnotes/#:~:text=A%20sequential%20circuit%20refers%20to,forte.	al Periods oduction to the Ve on Learning, 2013 dition, Technical H n, Pearson Educati n, Sixth Edition, 0 m%20of%20the%	45 crilog HDL, Publication on, 2017. CENGAGE 20present%20sta
Text Book 1. 2. REFEREN 1. 2. 3. 4. E-Resour 1. 2.	Tota S: M. Morris R. Mano, Michael D. Ciletti, "Digital Design: With an Intro VHDL, and SystemVerilog", 6th Edition, Pearson Education, 2021. Charles H.Roth. "Fundamentals of Logic Design",6th Edition, Thomson NCE BOOKS: Digital Electronics - A Conceptual Approach [Print Replica] Kindle Edition by D.A.GodseA.P.Godse, 2014 G. K. Kharate, Digital Electronics, Oxford University Press, 2010 John F. Wakerly, Digital Design Principles and Practices, Fifth Edition Charles H. Roth Jr, Larry L. Kinney, Fundamentals of Logic Design Learning, 2013 rces: https://byjus.com/gate/sequential-circuitsnotes/#:~:text=A% 20sequential% 20circuit% 20refers% 20to,for te. https://www.youtube.com/watch?v=Wj01JfGEQT8	al Periods oduction to the Ve on Learning, 2013 dition, Technical H n, Pearson Educati n, Sixth Edition, 0 m%20of%20the%	45 erilog HDL, Publication on, 2017. CENGAGE 20present%20sta

		VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode – 637 205													
Progr	amme]	B.E. /B	.Tech.		Pr	ogrami	ne code	e		Reg	gulatio	on	20)23
Depar	rtment	CSE	, IT &	CST							S	emest	er]	II
C	1 .		(۲			Pe	riods p	er wee	k	Credit]	Maxim	um l	Marks
Course	code		C	Jourse 1	name		L	Т	Р		С	CA	A Es	SE	Total
U23CS	5305	Com Arch	puter nitectu	Orgai ire	nizatio	on and	3	3 () 0		3	4	0 6	0	100
	The student should be made to,														
Соц	rse	•	Discu	ss the b	asic co	ncepts a	and stru	icture o	of comp	outers					
Objec	tive	•	Under	rstand c	oncept	s of con	nputer j	process	ing uni	ts and	l addre	ssing	modes		
0 ~ j ••		•	Know	the log	gic and	arithme	etic ope	rations							
	• Explain different types of I/O and memory organization.														
		know about the Parallelism concepts in Programming													
		At the end of the course, the students will be able to, KI													
CO1: Examine various concepts of basics of computer organization and architecture												K2			
Cou	rse	CO2	: Identi	ify the o	lifferen	ice betw	veen RI	SC and	CISC	archi	tectures	S			K 2
Outco	ome	CO3: Demonstrate various arithmetic operations													
0		CO4: Analyze the various performance measures for memory and I/O organization													K3
		CO5: Interpret performance of different pipelined processors and multi core architectures.												K3	
Pre)-														
requis	sites	-													
	(3/2	0/1 indi	rates str	ength of	CO / Po	O Mapp	ing Strong) – Med	ium 1.	. Weal	7			CO/P Aanr	SO
COs	(3/2	2/ 1 man	20103 511	enguio	Program	nme Out	comes (POs)	<u>iuiii, i</u>	W Cal	<u> </u>		PSOs	/1app	ing
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO11	PO12	PSO1	PSC)2
CO 1	3	2	2							1		1	3		2
CO_2	2	3	1	2						1			2	_	2
CO 4	2	2	2	2				2		1		2	2		2
CO 5	2	2	1		2			1		1		1	3		2
Course	Assess	ment I	Method	ls	•		•	•	•						
Direct	11000000		1001100												
1.	Conti	nuous	Assess	ment To	est I, II	& III									
2.	Assig	nments	s / Sem	inar/Qu	liz										
J. Indire	ct	Semesu		matioi	15										
1.	Course	e - end	survey	,											
Conten	t of the	syllab	ous												

Unit -	I BASIC STRUCTURE OF COMPUTERS	Periods	9									
Digital C	omputers: Definition of Computer Organization - Computer Design and Co	mputer Arch	itecture -									
Bus and r	nemory transfers.	•										
Basic Co	mputer Organization and Design: Instruction codes- Computer Registers -	Computer ins	tructions									
-Timing a	nd Control - Instruction cycle - Memory Reference Instructions- Input - Outp	out and Interru	.upt.									
Unit –	II BASIC PROCESSING UNIT	Periods	9									
Central	Processing Unit: General Register Organization - Instruction Formats-Add	dressing mod	es- Data									
Transfer and Manipulation - Program Control												
Reduced Instruction Set Computer: CISC Characteristics -RISC Characteristics												
Unit –	III ARITHMETIC FOR COMPUTERS	Periods	9									
Signed an	nd Unsigned number representations - Arithmetic operations: Addition an	nd Subtractio	n – Fast									
Adders -	- Binary Multiplication – Booth algorithm-Binary Division – Floatin	g Point Nu	mbers –									
Represen	tation and operations: Arithmetic Micro operations-logic micro operations-	shift micro op	erations-									
Arithmeti	c logic shift unit.											
Unit –	IV I/O AND MEMORY ORGANIZATION	Periods	9									
Input-Ou	tput Organization: Input-Output Interface- Asynchronous data transfer-	Modes of '	Transfer-									
Priority I	iterrupt - Direct memory Access.											
Memory	Organization: Memory Hierarchy -Main Memory - Auxiliary memory - Asso	ciate Memor	y- Cache									
Memory.			0									
Unit -	V PIPELINING AND MULTI CORE ARCHITECTURE	Periods	9									
Pipeline	and Vector Processing: Parallel Processing, Pipelining, Arithmetic Pipeline	, Instruction	Pipeline,									
RISC Pip	eline, Vector Processing, Array Processor.	, ,	1 /									
Multi co	e architecture: Introduction to Multi-core Processors- Multi-core Processo	r Architectur	e- Multi-									
core Proc	essor Machines - Applications of using Multi-core Processors											
	Te	otal Periods	45									
Text Boo	ks											
1.	M. Morris Mano and Rajib Mall, "Computer System Architecture", Pearso third edition 2017	n Education,	Revised									
2	Carl Hamacher Zvonko Vranesic and Safwat Zaky "Computer Organization	n". Fifth Editi	on									
2.	McGraw Hill Education, 2017.	, , i iiui Luiu	011,									
Referenc	es											
1	William Stallings, "Computer Organization and Architecture – Designing f	or Performan	nce", 10 th									
1.	Edition, Pearson Education, 2022.											
•	John L. Hennessey and David A. Patterson, "Computer Architecture - A Qu	antitative Ap	proach",									
2.	Morgan Kaufmann / Elsevier Publishers, 6 th Edition, 2017.		•									
3.	John P. Hayes, "Computer Architecture and Organization", Third Edition, M	cGraw Hill, 2	2017									
	V.P. Heuring, H.F. Jordan, "Computer Systems Design and Architecture", Se	cond Edition	Pearson									
4.	Education, 2003.		,									
5.	Shyamala Devi M, "Multi-Core Architectures and Programming", Vijay Nic	ole Imprints,	2018.									
E-Resour	rces											
1.	https://www.javatpoint.com/computer-organization-and-architecture-tutorial											

2.	https://www.studytonight.com/computer-architecture/memory-organization
3.	http://home.ustc.edu.cn/~louwenqi/reference_books_tools/Computer%20Organization%20and%20 Architecture%2010th%20-%20William%20Stallings.pdf
4.	https://medium.com/@adityasinghz/multi-core-processor-architecture-7580bc347042
5.	https://www.mbit.edu.in/wp-content/uploads/2020/05/computer-systems-Architecture.pdf

	VIVEKANA (Autone	EN	Reference in the second										
Programme	B.E /B.Tech.		Prog	ramm	e Code		Regulation	1	2023				
Department	CSE, EEE,ECH	E,IT, BME, CS	ST				Sen	nester	III/I	V			
Course Code	Course Name		Period	ls Per	Week P	Credit	Maximun	n Marks	s ESE	Total			
U23IT302	Data Structur	es	3	0	0	3	40		60	100			
Course Objective	Course ObjectiveThe main objective of this course is to: 												
At the end of the course, the student should be able to,													
	CO1: Impleme	ent List ADT	and its	types	•					K1			
Course Outcome	CO2: Impleme Parsing the Ar		К2										
	CO3: Impleme	CO3: Implement Tree ADT, Binary search tree, AVL and Splay tree in C											
	CO4: Develop ordering and M		K4										
	CO5: Impleme	ent various sc	orting a	nd sea	rching	algorith	ms in C			K4			
Pre-requisites	-												
	(3/2/1indicatesstreng	CO /POMap (thofcorrelation)	ping 3-Strong	,2–Mec	lium,1–V	Weak		CO Ma	D/PSO apping				
COs PO	PO2 PO3 PO	Programme	\mathbf{Outcom}	POS POS) PO 9	PO 10 F	PO 11 PO 12	PSO1		2SO2			
CO1 3	3 3	3 3 2	1				2 2	3		3			
$\begin{array}{c c} \mathbf{CO2} & 3 \\ \hline \mathbf{CO3} & 3 \end{array}$	3 3 3	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1		-		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	3		3			
CO 4 3	3 3	$3 \qquad 3 \qquad 2$ $3 \qquad 3 \qquad 2$	1				2 2	3		3			
CO 5 3	3 3	3 3 2	1				2 2	3		3			
Course Assessn	nent Methods												
Direct													
1. Conti	nuous Assessment 7	Test I, II & III											
2. Assig	nment / Quiz / Semi	nar											
3. End-S	emester examinatio	ns											
Indirect													
1. Cours	e - end survey												
Content of the	svllahus												
Unit – I	55140945	INTR	ODUC	TION	J		Pe	riods		9			
Abstract Date		- List ADT -	Arrav-	based	implei	nentatio	n - Linked	list in	nleme	entation –			
Singly linked	lists – Doubly-li	nked lists - C	ircular	ly link	ed lists	s – Appl	ications of	lists –	Polyn	omial ADT			

Unit - II	STACKS, QUEUES AND DEQUEUES	Periods	9							
Stack AD	T – Array based implementation – List based implementation – Bala	ncing Symbols -	- Evaluating							
arithmetic	expressions - Infix to Postfix conversion – Queue ADT – Array	based implement	ation – List							
based imp	lementation – Circular Queue ADT – Priority Queue- Double Ended	Queue.								
Unit – III	TREES	Periods	9							
Tree ADT –Binary Trees – Binary Search Tree - Tree - Traversal Algorithms -Search Trees : AV Tree – Splay Tree- Balancing Tree- B+.										
Unit - IV	GRAPHS	Periods	9							
Graph A Minimum	DT –Types of Graphs – Graph Traversals – Topological Orderin Spanning Tree – Prims Algorithm – Kruskal's Algorithm.	g – Dijkstra's Alg	orithm –							
Unit – V	SORTING, SEARCHING AND HASHING	Periods	9							
Types of	f Sorting - Bubble Sort – Selection Sort – Insertion Sort – Shell Se	ort – Quick Sort	– Radix							
Sort – Me	rge Sort- Linear Search – Binary Search- Heap Search Hashing – (Jpen Addressing	g – Separate							
Chaining	-Hash Functions.									
Tort Dool	<u>T</u>	otal Periods	45							
1 ext Book	S: Beame Thereis, "Date structure using a "Oxford University Press	Second Edition	2022							
1.	Reema mareja, Data structure using c ,Oxford University Press, Second Edition, 2023.									
2.	Mark Allen Weiss, "Data Structures and Algorithm Analysis in C", Edition ,2002.	Pearson India , S	econd							
REFEREN	NCE BOOKS:									
1.	Charles E. Leiserson, Charles E. Leiserson, Ronald L. Rivest, Cliff Algorithms ", Fourth Edition , MIT Press , 2022.	ord Stein ,"Intro	duction to							
2.	Narasimha Karumanchi - Data structures and algorithms made eas	y, 1 st Edition ,201	.6.							
3.	R. Venkatesan and S. Lovelyn Rose,"Data Structures ",2nd Editio	n, Wiley Publica	tions,2019.							
4.	Robert Sedgewick and Kevin Wayne, "Algorithms",4th Edition, Ac	ldison-Wesley, 2	011.							
5.	Peter Brass, "Advanced Data Structures", 1st Edition, Cambridge, 2)08.								
E-Resour	ces:									
1.	https://www.javatpoint.com/data-structure-tutorial									
2.	https://www.geeksforgeeks.org/data-structures									
3.	https://www.udemy.com/course/data-structures-and-algorithms-dee	p-dive-using-java	1							
4.	https://dl.ebooksworld.ir/books/Introduction.to.Algorithms.4th.Leiserson. Press.9780262046305.EBooksWorld.ir.pdf	Stein.Rivest.Corme	en.MIT.							



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN

(Autonomous Institution Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode– 637205



Programme	B.Tech.	Prog	ramm	e code	104	Regul	ation	2023				
Department	Information Technology				Se	mester			III			
Course	Course Neme		Pe	Periods per week Credi				Maximum Marks				
Code	Course Name Verbal, Quantitative Ap and Reasoning - I The student should be mad Identify and Understand Use number and factorin		L	Т	Р	C	CA	ESE	Total			
U23CTCP1	Verbal, Quantitative Apt and Reasoning - I	itude	2	0	0	1	40	60	100			
Course Objective	The student should be mad Identify and Understand t Use number and factoring Help in prep	 tudent should be made to, Identify and begin to apply the language features Understand the mathematical techniques for solving the real life problems Use number theory arguments to justify relationships involving divisors, multiples and factoring Help in preparation of competitive exams 										
	At the end of the course, th		Knowledge Level									
	CO1: Use language through acquisition of grammar rules											
Course Outcome	CO2: Demonstrate the use and relationships	atterns	K2									
	CO3: Face external compe	titive exa	ms						K3			
	CO4: Solve a question in a	fraction	of mir	nute usi	ng short	cut meth	ods		K3			
	CO5:Enhance their problem	m solving	; skills	and lo	gical Ski	lls			K4			
Pre- Requisites	-											

(3)	CO / PO Mapping (3/2/1 indicates strength of correlation) 3-Strong, 2 – Medium, 1 – Weak												CO/PSO Mapping		
Programme Outcomes (POs)													PSOs		
COs	РО 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	
CO 1		2		3	2					3		3	1	2	
CO 2	3	3		2	2					3		3	2	3	
CO 3	3	3		3	2					3		3	3	3	
CO 4	3	3		2	3					2		2	3	3	
CO 5		2		2	2					2		2	3	3	

Course Assessment Methods

Direct

- 1. Continuous Assessment Test I, II & III
- 2. Assignment/Quiz
- 3. End-Semester Examination

Indirect

1. Course -end survey

Content of the syllabus

Unit –I VERBAL ABII	LITY (ERROR SPOTTING)	Periods	5								
CONJUNCTIONS: Error on coordinative conjunction: The seven coordinating conjunctions are (fan boys): for, and, nor, but, or, yet, so, Errors on Subordinate Conjunction After, although, as soon as, because, before, by the time, in case, now that, since, unless, when, whether or not, while, yet, Errors on correlative conjunction (Eitheror, neithernor, not only but also, asas, bothand, whether or, soas, suchthat, the)											
CONDITIONAL CLAUSES: Errors on Zero condition, Errors on first condition of If clauses, Errors on second condition of If clauses, Errors on third condition of If clauses											
 ADVERBS: Errors on conjunctive adverb, Errors on adverbs of frequency, Errors on adverbs of time, Errors on adverbs of manner, Errors on adverbs of place, Errors on adverbs of degree ADJECTIVES: Errors on descriptive adjectives, Errors on demonstration adjectives, Errors on distributive adjectives, Errors on interrogative adjectives, Errors on numeral, Errors on quantitative adjectives, Errors on proper adjectives, Errors on possessive adjectives DETERMINERS: Definite Article, Indefinite Article, Quantifying Article – few, many, Possessive Article, (my, Errors on adverbative) 											
your, his, her, its, our, your, their) NOUNS: Pronoun, Common Noun, Colle	ctive Noun, Abstract Noun, Material Noun										
SUBJECT – VERB AGREEMENT: Singular Subjects and Singular Verbs, Err Errors on compound subjects, Errors on c	ors on plural subjects with plural verbs, Err ollective noun, Errors on singular or plural	ors on indefinit	te pronouns,								
Unit–II NUI	MBER SYSTEMS	Periods	6								
NUMBER SYSTEMS (Divisibility Rule Fermets) Progressions(Arithmetic, Geon	e, Unit Digit, Remainder Theorem(1 Or hetric Harmonic) Log Surds And Indices	-1, Cancellatio	n, Wilson,								
Unit – III AVERAGE AN	D LCM & HCF PROBLEMS	Periods	8								
 Average, Basic Wodel, Fatual Average, S. Overan Average, inclusion/Exclusion of A value in a Group, Increased or Included or Added or More and Replaced, Substituted, Cricket Based Model, Misread Model, Allegation and Mixture, Mean, Median and Mode, Miscellaneous) LCM and HCF (Find The LCM, HCF and Its fractions, Product of Two Numbers Model, LCM, HCF with Remainders Model, Smallest/Largest Based Model, Tolling Together Model, HCF Related Questions (Keyword: Distinct, Divided, Equal Number of Rows (Distributed Equally)), Mensuration Related Questions, No. of Pairs 											
Unit-IV RATIO	AND PROPORTION	Periods	5								
RATIO (Zig Zag Model, Finding The I Ratios, Increment/Decrement Based Ratio	ndividual Component, Coins & Values Ba s, Miscellaneous)- PROPORTION (Contin	sed Ratios, Nu uous, Third, Fo	mber Based ourth, Mean)								
Unit-V LOG	ICAL REASONING	Periods	6								
CODING-DECODING- Types of Coding and Decoding (Letter Coding, Conditional Coding, Crypt arithmetic – Addition, Crypt arithmetic – Subtraction) BLOOD RELATION (Type 1: Pointing or Introducing, Type 2: Family Tree or Relational Puzzle, Type 3: Coded Relation) NUMBER SERIES (Pattern 1: Perfect Square Series, Pattern 2: Perfect Cube Series, Pattern 3: Geometric Series, Pattern 4: Ratio series, Pattern 5: Multi Stage Series) SVLLOCISM (Type 1: BASIC SYLLOGISM, Type 2: Fither or Neither nor, Type 3: Only – Only a few)											
	Т	otal Periods	30								
Text books											
1. Rajeev Varma, "Fast Track Ob	Rajeev Varma, "Fast Track Objective Arithmetics", Arihant Publications, 2024										
2. R.S. Aggarwal, "Modern Approach to Logical Reasoning", S Chand Publishing, 2022											
2. R.S. Aggarwal, "Modern Appr	oach to Logical Reasoning", S Chand Publi	shing, 2022									
2. R.S. Aggarwal, "Modern Appr 3. SP Bakshi, "Objective General	oach to Logical Reasoning", S Chand Publi English", Arihant Publications, 2024	shing, 2022									

2.	Dinesh Khattar, "The Pearson guide to Quantitative Aptitude for Competitive Examinations", 3rd
	edition, 2016
3.	Arun Sharma, "How to Prepare for Logical reasoning for CAT", McGraw Hill Education; 2014
4.	Jaikishan and Premkishan, "How to Crack Test of Reasoning", Arihant Publications, 2016
5.	R.S. Agarwal, "A modern Approach to verbal and non-verbal reasoning", S Chand Publishing, 2018
E-Resou	irces
1.	Aptitude: <u>https://www.indiabix.com</u>
2.	Reasoning: https://placement.freshersworld.com
3.	Verbal: <u>https://testbook.com</u>

	CONSIL SUPERVISE		,	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode– 637205												
	Progra	amme	B.F	2. /B.T	'ech.			Pro	gramr	ne cod	e		Regu	lation		2023
	Depart	tment	CSI	E , IT									Sei	nester		III
0	Ourse	code			Cour	se nan	ne		Pe	riods p	oer week	Cr	edit	Ma	aximum	n Marks
		couc			Cour	se nan			L	,	Г Р	(С	CA	ESE	Total
	U23C	S306	Pyt Fra	hon P mewo	rogra rks *	mmin	g and		3	() 2		4	50	50	100
			The	stude	nt sho	uld be	made	to,								
	Cour	se		• U	nderst	and th	e fund	lamenta	als of 1	Python	n program	nming				
	Object	tive		• H	andle	list, tu	ples, s	ets and	l Dicti	onarie	s data ty	pes				
	Ŭ			• Lo	earn fu	inction	n of O	OPS an		UD Op	perations					
				• Lo	earn L	Pata M	anipul	ation ii	n Nur	ıРу						
Understand Data Manipulation with pandas and data visualization														VI		
At the end of the course, the student should be able to,													KL			
			CO	1: Int	erpret	the fu	ndame	ental Py	thon s	syntax	and sem	antics	and be	e fluent	t in the	K2
	Cour	se	use	of Pyt	hon co	ontrol	flow s	tatemei	nts							
Outcome CO2: Perform operations on list, tuples, sets and Dictionaries using python.											K2					
CO3: Implement the OOPS concept and CRUD Operations.												K3				
			CO	4: Ap	ply N	umpy	for Da	ta Man	ipulat	ion and	d perfor	m opera	tions	on CS	V files.	K3
CO5: Perform Data Manipulation with pandas and data visualization.											K3					
	Pre- requisites															
	Pre- requisi	- ites	-													
	Pre- requis	- ites	-			C	0 /PO	Mappi	ng						C0/	PSO
	Pre- requis	- ites	- (3/2/1	indicat	tes stre	C ngth of	O /PO f correl	Mappi ation) 3	ng -Stron	g,2–Me	edium,1 -	Weak			CO/ Map	PSO pping
	Pre- requisi	- ites	- (3/2/1	indicat	tes stre	C ngth of Pr	O /PO f correl	Mappi ation) 3 me Outo	ng -Stron comes(g,2–Me (POs)	edium,1 -	Weak			CO/ Map PS	PSO ping Os
	Pre- requis	- ites PO 1	- (3/2/1 PO 2	indicat PO 3	tes stre PO 4	Congth of Pr PO 5	O /PO f correl rogram PO 6	Mappi ation) 3 me Outo PO 7	ng -Stron comes(PO 8	g,2–Me (POs) PO 9	edium,1 - PO10	Weak	РС	012	CO/ Map PS PSO1	PSO ping Os PSO2
	Pre- requist	- ites PO 1 3	- (3/2/1 PO 2 2 3	indicat PO 3	PO 4	C ngth of Pr PO 5	O /PO f correl rogrami PO 6	Mappi ation) 3 me Outo PO 7 -	ng -Stron comes(PO 8	g,2–Me (POs) PO 9 -	edium,1 - PO10 -	Weak P011 -	PC	D12	CO/ Map PS PSO1 3 2	PSO pping Os PSO2 2
	Pre- requisi COs CO 1 CO 2 CO 3	- ites PO 1 3 3 3	- (3/2/1 PO 2 2 3 3 3	indicat PO 3	PO 4 - 1 2	C ngth of Pr PO 5 1 2 2	O /PO f correl ogramm PO 6 - -	Mappi ation) 3 me Outo PO 7 - -	ng -Stron comes(PO 8 - -	g,2–Me (POs) PO 9 - - -	edium, 1 - PO10 - - -	Weak PO11	PC	112 2 2 2 2	CO/ Map PS01 3 3 3	PSO pping Os PSO2 2 2 2 2
	Pre- requisi	PO 1 3 3 3 3	- (3/2/1 PO 2 2 3 3 3 3	indicat PO 3 1 1 1	PO 4 - 1 2 2	C ngth of Pr PO 5 1 2 2 2	O /PO f correl rogramm PO 6 - - -	Mappi ation) 3 me Outo PO 7 - - - -	ng -Stron comes(PO 8 - - -	g,2–Me (POs) PO 9 - - - -	edium,1 - PO10 - - - -	Weak P011	PC	112 2 2 2 2 2 2	CO/ Map PS PSO1 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2
	Pre- requisi COs CO1 CO2 CO3 CO4 CO5	PO 1 3 3 3 3 3 3 3	- (3/2/1 PO 2 2 3 3 3 3 3	PO 3 1 1 1 1 1	PO 4 - 1 2 2 2 2	C ngth of Pr PO 5 1 2 2 2 2 2	O /PO f correl ogramm PO 6 - - - -	Mappi ation) 3 me Outo PO 7 - - - - -	ng -Stron comes(PO 8 - - - -	g,2–Me (POs) PO 9 - - - - - -	edium, 1 - PO10 - - - - -	Weak PO11	PC	112 2 2 2 2 2 2 2	CO/ Map PS01 3 3 3 3 3 3 3	PSO ping Os PSO2 2 2 2 2 2 2 2 2 2 2 2 2 2
	Pre- requise COs CO 1 CO 2 CO 3 CO 4 CO 5	PO 1 3 3 3 3 3 4	- (3/2/1 PO 2 2 3 3 3 3 3 3	PO 3 1 1 1 1	PO 4 - 1 2 2 2	C ngth of Pr PO 5 1 2 2 2 2 2	O /PO f correl ogramm PO 6 - - - - -	Mappi ation) 3 me Outo PO 7 - - - - -	ng -Stron comes(PO 8 - - - -	g,2–M€ (POs) PO 9 - - - - -	edium, 1 - PO10 - - - - -	Weak PO11		112 2 2 2 2 2 2 2	CO/ Map PS PSO1 3 3 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2 2 2
C	Pre- requisi COs CO1 CO2 CO3 CO4 CO5	PO 1 3 3 3 3 3 Assess	- (3/2/1 PO 2 2 3 3 3 3 ment	PO 3 1 1 1 1 1 1 Meth	PO 4 - 1 2 2 0 0 0 8	C ngth of Pr PO 5 1 2 2 2 2 2	O /PO f correl ogrami PO 6 - - - -	Mappi ation) 3 me Outo PO 7 - - - - -	ng -Stron comes(PO 8 - - - -	g,2–Me POs) PO 9 - - - - -	edium, 1 - PO10 - - - -	Weak PO11	PC	112 2 2 2 2 2 2 2	CO/ Map PS01 3 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2 2
CD	Pre- requisi COs CO 1 CO 2 CO 3 CO 4 CO 5 Ourse A irect 1.	PO 1 3 3 3 3 Assess Conti	- (3/2/1 PO 2 2 3 3 3 3 3 3 ment	PO 3 1 1 1 1 1 1 1 1 5 Meth	PO 4 - 1 2 2 ods ssmen	C ngth of Pr PO 5 1 2 2 2 2 2 2	O /PO f correl ogrami PO 6 - - - - - - -	Mappi ation) 3 me Outo PO 7 - - - - -	ng -Stron comes(PO 8 - - - - -	g,2–Me (POs) PO 9 - - - - -	edium, 1 - PO10 - - - - -	Weak PO11		112 2 2 2 2 2 2 2	CO/ Map PS PSO1 3 3 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2 2
CD	Pre- requisi COs CO1 CO2 CO3 CO4 CO5 Ourse A irect 1. 2.	PO 1 3 3 3 3 Assess Conti Assig	- (3/2/1 PO 2 2 3 3 3 3 3 ment nuous	PO 3 1 1 1 1 1 Meth s Asse ts / Se	PO 4 - 1 2 2 ods ssmen eminar	C ngth of Pro 5 1 2 2 2 2 2 t Test /Quiz	O /PO f correl ogrami PO 6 - - - - I, II & /Mode	Mappi ation) 3 me Outo PO 7 - - - - -	ng -Stron comes(PO 8 - - - -	g,2–Me POs) PO 9 - - - -	edium, 1 - PO10 - - - -	Weak P011		112 2 2 2 2 2 2 2	CO/ Map PS01 3 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2 2
CD	Pre- requisi COs CO 1 CO 2 CO 3 CO 4 CO 5 Ourse A irect 1. 2. 3.	PO 1 3 3 3 3 Assess Conti Assig End-S	- (3/2/1 PO 2 2 3 3 3 3 3 ment nuous nmen Semes	PO 3 1 1 1 1 1 1 1 1 1 1 1 5 Meth s Asse ts / Se ter ex:	PO 4 - 1 2 2 ods ssmen aminar	C ngth of Pr PO 5 1 2 2 2 2 2 2 2 t Test /Quiz, tions	O /PO f correl ogrami PO 6 - - - - - - - - - - - - - - - - - - -	Mappi ation) 3 me Outo PO 7 - - - - - -	ng -Stron comes(PO 8 - - - - -	g,2–Me POs) PO 9 - - - - -	edium, 1 - PO10 - - - - -	Weak P011		112 2 2 2 2 2 2 2 2	CO/ Map PS PSO1 3 3 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2 2
C D	Pre- requisi COs CO 1 CO 2 CO 3 CO 4 CO 5 Ourse A irect 1. 2. 3. Indirect	PO 1 3 3 3 3 Assess Conti Assig End-S	- (3/2/1 PO 2 2 3 3 3 3 3 3 ment nuous nmen Semes end	PO 3 1 1 1 1 1 Meth s Asse ts / Se ter examples	PO 4 - 1 2 2 ods ssmen eminar aminar	C ngth of Pr PO 5 1 2 2 2 2 2 2 2 t Test /Quiz	O /PO f correl ogrami PO 6 - - - - - - - - - - - - - - - - - - -	Mappi ation) 3 me Outo PO 7 - - - - - - - - - - - - - - - - - - -	ng -Stron comes(PO 8 - - - - -	g,2–Me (POs) 	edium, 1 - PO10 - - - - -	Weak P011		512 2 2 2 2 2 2 2 2 2	CO/ Map PS01 3 3 3 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2
	Pre- requisi COs CO 1 CO 2 CO 3 CO 4 CO 5 Ourse A irect 1. 2. 3. Indirect 1.C 0 0 1 CO 1 CO 2 CO 3 CO 4 CO 5	PO 1 3 3 3 3 Assess Conti Assig End-S t ourse of the	- (3/2/1 PO 2 2 3 3 3 3 3 ment nuous nmen Semes -end e sylla	PO 3 1 1 1 1 1 1 1 1 Meth s Asse ts / Se ter exa survey bus	PO 4 - 1 2 2 ods ssmen eminar amina	C ngth of Pro 5 1 2 2 2 2 t Test /Quiz, tions	O /PO f correl ogrami PO 6 - - - - I, II & /Mode	Mappi ation) 3 me Outo PO 7 - - - - -	ng -Stron comes(PO 8 - - - -	g,2–Me POs) PO 9 - - - -	edium, 1 - PO10 - - - -	Weak PO11		n12 2 2 2 2 2 2	CO/ Map PS01 3 3 3 3 3 3	PSO ping Os PSO2 2 2 2 2 2 2
C D	Pre- requisi COs CO 1 CO 2 CO 3 CO 4 CO 5 Ourse 4 irect 1. 2. 3. Indirect 1.C 0ntent Unit -	PO 1 3 3 3 3 3 Assess Conti Assig End-S tourse of the -I	- (3/2/1 PO 2 2 3 3 3 3 3 ment nuous ment semes -end sylla	PO 3 1 1 1 1 1 1 1 Meth s Asse ts / Se ter ex- survey bus	PO 4 - 1 2 2 ods ssmen minar amina	C ngth of Pr PO 5 1 2 2 2 2 2 2 2 t Test /Quiz / tions	O /PO f correl ogrami PO 6 - - - - - - - - - - - - - - - - - - -	Mappi ation) 3 me Outo PO 7 - - - - - - - - - - - - - - - - - - -	ng -Stron comes(PO 8 - - - - -	g,2-Me (POs) 	edium, 1 - PO10 - - - - -	Weak PO11		112 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	CO/ Map PSO1 3 3 3 3 3 3 3 3 3 2 3	PSO pping Os PSO2 2 2 2 2 2 2 2
C D Intt	Pre- requisi COs CO 1 CO 2 CO 3 CO 4 CO 5 ourse A irect 1. 2. 3. Indirect 1.C Ontent Unit-	PO 1 3 3 3 3 Assess Conti Assig End-S t ourse of the -I	- (3/2/1 PO 2 2 2 3 3 3 3 3 ment nuous nmen Semes -end sylla Pythop	PO 3 1 1 1 1 1 1 1 Meth s Asse ts / Se ts / Se survey bus	PO 4 - 1 2 2 ods ssmen eminar aminar aminar	C ngth of Pr PO 5 1 2 2 2 2 2 2 2 2 t Test /Quiz , tions	O /PO f correl ogrami PO 6 - - - - I, II & /Mode	Mappi ation) 3 me Outo PO 7 - - - - - - - - - - - - - - - - - - -	ng -Stron comes(PO 8 - - - - - - - Pytho riting	g,2-Me POs) - - - - - - - - - - n	edium, 1 - PO10 - - - - -	Weak PO11 Pothon		Peam —	CO/ Map PSO1 3 3 3 3 3 3 3 3 eriods	PSO ping Os PSO2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
C D] C Intri	Pre- requisi cOs cO1 cO2 cO3 cO4 cO5 ourse A irect 1. 2. 3. Indirect 1.C ontent Unit - roduction	PO 1 3 3 3 3 3 3 3 Assess Conti Assig End-S t ourse of the on to H s, cons	- (3/2/1 PO 2 2 3 3 3 3 3 ment nuous nment Semes -end sylla Pythor stants,	indicat PO 3 1 1 1 1 1 1 Meth s Asse ts / Se iter ex: survey bus h, featu varia	PO 4 - 1 2 2 ods ssmen eminar aminar aminar ures, in bles, o	C ngth of Pr PO 5 1 2 2 2 2 2 2 2 2 2 2 2 2 1 2 2 2 1 2 2 2 2 1 2	O /PO f correl ogrami PO 6 - - - - - - - - - - - - - - - - - - -	Mappi ation) 3 me Outo PO 7 - - - - - - - - - - - - - - - - - - -	ng -Stron comes(PO 8 - - - - - - - - - - - - - - - - - - -	g,2–Me (POs) PO 9 - - - - - - - - - - - - - - - - - - -	edium, 1 - PO10	Weak PO11 Python ments,	PC	012 12 2 2 2 2 2 2 2 2 2 2 2 3 am — ol state	CO/ Map PSO1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
C D Intri con pass	Pre- requisi COs CO 1 CO 2 CO 3 CO 4 CO 5 Ourse A irect 1. 2. 3. Indirect 1.C Ontent Unit - roductionments is, break	PO 1 3 3 3 3 3 Assess Conti Assig End-S ct ourse of the -I on to H s, cons k, Mut	- (3/2/1 PO 2 2 3 3 3 3 3 ment nuous mens mens emes -end sylla Pythor stants, table	PO 3 1 1 1 1 1 1 1 1 1 1 1 1 1	PO 4 - 1 2 2 ods ssmen eminar aminar aminar ures, in bles, o nutabl	C ngth of Pr PO 5 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 7 7 7 7 7	O /PO f correl ogramm PO 6 - - - - - - - - - - - - -	Mappi ation) 3 me Outo PO 7 - - - - - - - - - - - - - - - - - - -	ng -Stron comes(PO 8 - - - - - - - - - - - - - - - - - - -	g,2–Me (POs) PO 9 - - - - - - - - - - - - - - - - - - -	edium, 1 - PO10	Weak PO11 Python ments, Searchi	PC	Peam — ol state Loopin	CO/ Map PSO1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	PSO pping Os PSO2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

Unit–II	Data Structures, File Operations and Exception	Periods	9							
Lists – List ope Dictionaries – I	erations – slices and methods – Dictionaries – Dictionaries as set of Co Dictionaries and Lists – Tuples – Tuples Basics – Lists and Tuples – Dict	unters – Loo tionaries and	ping and Tuples –							
Sequences of se paths – Excepti	equences – Sets – Sets Basics – Set Operations – Files – Basic File Operat on Handling.	tions – File na	ames and							
Unit – III	Object Oriented Programming & Python Database Integration	Periods	9							
Classes and Ob	jects - Classes and Functions - Classes and methods - Object-oriented	l features – _	_init_()							
method –str() method – Operator Overloading – Functions – Conditionals and recursion – I										
Functions – return values, parameters, local and global scope, function composition, recursion – Type										
dispatch – Polymorphism – Inheritance – Aggregation and Association – Need for database programm										
Connect Database – CRUD operations – Cursor Attributes										
Unit– IV	Data Manipulation with NumPy Arrays	Periods	9							
Python Enviror	ment & Frameworks: Anaconda – Jupyter notebook – NumPy: The Bas	sics of NumP	y Arrays							
– Computation	on NumPy Arrays - Aggregations - Computation on Arrays: Broadca	sting – Com	parisons,							
Masks and Boo	lean Logic – Fancy Indexing – Sorting Arrays – Structured Arrays.									
Unit-V	Data Manipulation with Pandas and Matplotlib	Periods	9							
Data Manipulat	ion with Pandas: Pandas Objects – Data Indexing and Selection – Operati	ng on data – I	Handling							
missing data –	Hierarchical Indexing – Concat and Append – Merge and Join – Aggreg	ation and Gr	ouping –							
Data Visualizat	ion with Matplotlib: Line plots: Line Colors and Styles – Axes Limits –	Labeling Plo	ts							
Suggested List	To To	tal Periods	45							
Suggested List	List of Experiments		CO's							
1. Implement exchange th linear search	basic programs in python (finding factorial of n, generating Fibon e values of two variables, calculating student grade, sum and average of n, printing a pattern).	acci series, n elements,	CO1							
2. Demonstrate	the various string manipulation functions		CO1							
3. Demonstrate	the various operations on List, Tuple, Dictionary, and Sets		CO2							
4. Implement th	ne different file operations and exception handling		CO2							
5. a) Implemen b)Implemen	t user-defined functions with different types of argument passing method t the concept of constructors and different types of inheritance	ls	CO3							
6. Implement th	ne concept of Aggregation, Association, and Polymorphism		CO3							
7. Develop an a	application to illustrate CRUD operations using Python and MySQL		CO4							
8. Develop an a	application to illustrate Array indexing, slicing, reshaping, and sorting us	ing NumPy	CO4							
9. Demonstrate	Data Manipulation with Pandas		CO5							
10. Demonstrat	e Data Visualization using line plots and histograms in Matplotlib		CO5							
	Lecture 45: Pr	ractical 30; 7	Fotal: 75							
Text Books:										
1. Allen B Publishe	Downey, "Think Python: How to Think Like a Computer Scientist", rs, 2016 for Units I,II,III	1 st Edition,	O'Reilly							
2. Jake Var O'Reilly	nder Plas, "Python Data Science Handbook Essential Tools for Working w Publishers, 2019 for Units IV,V	vith Data", 1 st	Edition,							
Reference:										
1.	Martin C Brown, "Python: The Complete Reference", 4th Edition, McGraw Hill Education, 2018									
-------	--									
E-Res	ources:									
1.	https://www.dataquest.io/blog/data-structures-in-python/									
2.	https://docs.python.org/3/library/stdtypes.html									
3.	https://www.geeksforgeeks.org/difference-between-association-and-aggregation/									
4.	https://www.i2tutorials.com/crud-operations-with-mysql-database-using-python/									

Å.	SHONAL MAL			VIVEK.	ANANI Autonom	DHA C nous Inst Elayar	OLLEG itution, A npalayam	E OF E ffiliated t , Tiruche	NGINE o Anna U ngode –	ERING Jniversity 637 205	G FOR W y ,Chennai)	OMEN		Time	Variagente Spittern SO 1001 2 Variation Co 1000000		
Prog	ramn	ne		B.E./B. 7	Tech.		P	rogram	me Coc	le		Regula	tion	2023			
Depa	artme	nt		CSE,EE	E,ECI	E, IT C	CST,BM	E			Se	emester		III/Γ	V		
Court	c C	a d a		Cauraa	James	,	,	Perio	ds Per	Week	Credit	Maxir	num N	Aarks			
Cour	se Co	Jue		Course	Name			L	Т	Р	С	CA		ESE	Т	otal	
U	2311	F 303		Data S Labor	structu atory	ires #		0	0	2	1	60)	4()	100	
Coui Obje	 Familiarize the operations on Linear Data Structures and Nonlinear Data Structures Understand the concepts of various Searching and Sorting Techniques Understand the basic operations on Search Trees Known to the basics of various graph Traversal methods. 																
	• Known to the basics of various graph fraversal methods. At the end of the course, the student should be able to, KL																
CO1: Implement List based and Array based Linear and Nonlinear Data												K3					
Cour Outo	rse come			CO2: Implement Stack ADT, Queue ADT, and Parsing the ArithmeticK3Expression in C											К3		
				CO3: Sı	ıggest	approp	riate Sea	arch Tre	ee for s	olving a	a given pi	oblem			K4		
				CO4: A	ppropr	iately u	ise the v	arious g	graph T	raversa	l for a giv	ven prob	lem			K4	
				CO5: In	npleme	nt vari	ous sort	ing and	search	ing algo	orithms in	C.				K3	
Pre-	requi	isites		-													
	- 1-																
				(3/2/1	indicate	estreno	CO/P thofcorre	O Mapp lation)3.	oing Strong	2_Medi	um 1 - Wea	k			C(M	D/PSO	
				(3/2/1	marcut	sstreng		Program	mme Oi	itcomes(POs)	K			P	SOs	
	Cos	PO 1	PO 2	2 PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 1	2 PS	501	PSO2	
C	201	3	2	1	1	2			1	1	1	1	1		1	1	
	$\frac{202}{102}$	3	2	1	1	2			1				1		1		
	203 104	3	$\frac{2}{2}$	1	1	2			1	1	1	1	1		1 1	1	
	CO 5	3	2	1	1	2			1	1	1	1	1		1	1	
		5	2	1	1				1	-	1	1	-		-	1	
Cour	rse A	ssessi	nent	Methods													
Dir	rect		1 -	<u> </u>	1.D	/ T 1	/										
			1. F 2 T	relab ar	nd Pos	t Lab /	Viva C	Juestio	ns								
	2. Record 3. End Samastar Examination																
Ind	J. Eliu-Schicstel Examination																
1110	1 Course - end survey																
			1. U	ourse -	chu su	лусу											
~																	

Suggested List of Experiments	CO's
1. Consider a scenario where a firm wants to maintain the data of its employees. The	CO1
data containing employee number, name, and salary and department are saved in a	COI

sin	ngly linked list. Create following functions for the employee list.	
	i. Insert at Front: Insertion of a record at the front.	
	ii. Insert at End: Insertion of a record at the end.	
	iii. Delete First: Deletion of first record.	
	iv. Delete Last: Deletion of last record.	
	v. Search: Searching any record based on employee number and dept no.	
	vi. Display: Displaying all records.	
2. W1	ite a C program to add two polynomials using Linked List.	CO1
3. Wi Ai	rite a C program to implement different operations on Stack and Queue using rays.	CO2
4. Wi fu	ite a C program that implements push(), pop(), display(), isEmpty() and peek() nctions of Stack using Linked List.	CO2
5. Wı di	ite a C program that implements enqueue(), dequeue(), size(), isEmpty() and splay() functions of Queue using Linked List.	CO2
6. W	rite a C program to convert an Infix expression : $a + b * c + (d * e + f) * g$ into e Postfix expression.	CO2
7. Wr in:	ite a C program to perform the following BST Operations - Creating node, sertion, in-order traversal and pre-order traversal.	CO3
8. W1 Se	ite a C program which results the implementation of Insertion, Deletion and earch operations in AVL Tree.	CO3
9. W1 on	ite a C program to perform Depth First Search and Breadth First Search traversal a graph.	CO4
10. W Pr	rite a C program for constructing a minimum cost spanning tree of a graph using im's Algorithm.	CO4
11. W gi	rite a C program to Search an element using Linear Search process and Sort ven elements using Insertion sort.	CO5
12. W res	rite a C program to implement Linear Probing and Separate Chaining Collision solution technique.	CO5
	Total Periods	45
E-Resour		
1.	https://www.programiz.com/c-programming	
2.	https://www.cprogramming.com/	
3.	https://beginnersbook.com/2015/02/simple-c-programs/	
Tools / S	Software Required:	
1.	Codetandra / HackerRank / HackerEarth / Any online Problem Solving Platforms	

	VIV. (Au	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode– 637205 Image: Comparison of											
Programme	B.Tech.		2		Progr	amme	code	104	Re	gulatior	ı	2023	
Department	Informa	tion Te	chnolo	gy					S	Semeste	r	III	
Common da		C		_		Perio	ds per	week	Credit	N	laximun	n Marks	
Course code		Cours	se name	e		L	Т	Р	С	CA	ESE	Total	
U23CTCP2	Personal	itv Dev	elopm	ent		1	0	2	1	60	40	100	
Course Objective	The stude • Eq too • An dev • En	 Fine student should be made to, Equip comprehensive understanding of various psychological and cognitive assessment tools Analyze, interpret, and apply these tools to improve personal and professional development Enhance communication 											
	• Ivialinge stress effectively At the end of the course, the student should be able to, Knowledge Level												
	CO1: En	nance S	Self-A	waren	ess							K2	
Course	CO2: Imp	rove Co	ommun	icatior	n Skills							K1	
Outcome	CO3: Acq	uire Be	tter Ac	ademi	c and L	ife Sat	isfactio	on				K2	
	CO4: Enh	ance Pr	oblem-	-Solvin	g Abili	ties						K3	
	CO5: Effe	ctive S	tress M	lanage	ment							K3	
Pre- requisites	-												
(3/	2/1 indicates	strength	CO / of corr Progr	PO M elation) ramme	apping 3-Stroi Outcom	ng, 2 – les (PO	Mediun s)	n, 1 – We	eak		CO/PS Mappin PSOs	O ng	
PO 1	PO 2 PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO 2	
				2			2	2		2	2	2	
CO 2				2			1	2		2	3	3	
CO 4				2			2	1		2	3	3	
CO 5				2			2	1		2	1	2	
Course Assessment Methods Direct 1. Self Assessment 2. Viva-Voce 3. End-Semester Examination Indirect 1.Course -end survey													

(Content of t	the Syllabus									
	S. No.	List of Experiments	СО								
	1.	Rosenberg's and Hare's Self Esteem tool	CO1								
	2.	Myers Brigg's 16 types of Personality	CO1								
	3.	Social Functioning scale	CO3								
	4.	Huebner, Laughlin, Ash, & Gilman's Multidimensional Students Life Satisfaction Scale	CO3								
	5. Body language Assessment CO										
	6. Fleming's VARK Learning Theory, bloom's taxonomy based on learners' CO2 queries										
	7.	Alexi's Presentation Secrets Assessment	CO2								
	8. Deductive and inductive logical reasoning assessment										
	9.	Procter and Gamble Assessment Gamified Tests	CO4								
	10.	Psychometric Test	CO3								
	11.	Stress buster Assessment	CO5								
		Total I	Periods : 30								
Refer	ences										
1.	Allan Peas	e, "Body language – how to read other's thoughts by their gestures", Sheldon pre	ess, London								
	publication	n, Tenth Impression 1988									
2.	Alexei Kap	oterev, "Presentation Secrets", John Wiley and Sons, 2011									
E-Res	ources										
1.	https://scal	es.arabpsychology.com									
2.	http://DOM	1Webserver.Hitchcock.org/mbti/									
3.	https://www	w.assessmentday.com/free/deductive-reasoning-1/DeductiveFreeTest-Solutions.p	odf								
4.	www.prepi	insta.com									

SEMESTER – IV

Signature of the BoS Chairman

S			VIVEK.	ANANI Autonom	DHA CO nous Institu Elayamp	LLEG tion, Af	E OF filiated	ENGI d to An hengod	NEEI na Uni le – 63'	RING versit 7 205	FOR y, Chen	WOM mai)	EN	TÙ	VEheinland UD stostes	2015 E 2015 E		
Prog	gramme	B. 1	lech				Prog	gramm	ne Coo	le	104	Regi	ulation 2023					
Depa	artment	INI	FORM	ATION	N TECH	NOLC) GY					Se	mester		IV	7		
Course	Code		Co	irse Na	ime	Р	eriod	s Per	Week	C	redit		Maxi	mum	Marks	8		
Course							L	Т	P	_	C	C	CA	ESI	Ξ	Total		
U23M	A405	Pro	babilit	y and S	Statistics	5	3	1	0		4	4	-0	60		100		
 Proficiently understand the expected value, variance, and higher-order moments of random variables (for both discrete and continuous types). Analyze and interpret statistical data using appropriate probability distribution Identify testing of hypothesis for all size of samples. Acquaint the knowledge of analysis of variance, this plays an important role in relife problems. Introduce the basic concepts of statistical quality control. 											nts of n e in real							
	At the end of the course, the student should be able to, Knowledge level												el					
CO1: Translate the density and distribution functions for discrete K3																		
Outcom	۵	CO	2: Enat	ole to id	lentify va	arious	proba	ıbility	distri	butic	ons.				K3			
Outcom	e	CO	3: Abil	ity to te	est the hy	pothes	sis usi	ing su	itable	stati	stical	test.			K5			
		CO exp	4: App eriment	ly the ts in the	basic co e field of	oncepts agricu	s of o llture	classif and c	icatio ompu	ns o ter so	f desi cience	gn of			K4			
	CO5: Have the notion of sampling distributions and statistical K5 techniques used in engineering and management problems																	
Pre-requ	isites	-			U	0		0										
					CO / PO	Mapp	ing							CO/P	so			
	(3/2	2/1 indi	cates str	ength o	f correlati	ion) 3-8	Strong	$\frac{1}{2}$, $2 - N$	Aediu	n, 1 -	Weak			Mapp	oing			
COs	PO 1	PO 2	PO 3	PO 4	Programi	$\frac{\text{me Out}}{\text{PO 6}}$	comes	$\frac{s(POs)}{POs}$)	<u>PO 9</u>	PO	PO	PO	PSOs PSO	PSO	PSO		
<u> </u>		2			1						10	11	12	1	2	3		
$\frac{\text{CO I}}{\text{CO 2}}$	3	2	1	1	1									2	1			
CO 3	3	2	1	1	1									2	1			
CO 4	3	2		1										2	1			
CO 5	3	2	1	1	1									2	1			
Course		ont M	othoda															
Direct	Issessiii		ethous															
1. 2.	Direct 1. Continuous Assessment Test I, II & III 2. Assignment																	
3.	End-Se	emester	r exami	nations														
Indirec	Course	- end	SURVAN															
1 .	Course	- chu	suivey															
Content of the syllabus																		
Unit – I INTRODUCTION TO PROBABILITY Periods 9+3																		
Introduction to Probability, Axioms of Probability: Sample spaces and events, axioms of Probability, sample																		
spaces having equally likely outcomes - Conditional Probability and independence- Baye's theorem (without																		
proof) an	id its ap	plicati	ons.	1 1 7 A Th		TT-	ODF					· .	a d -		0 1	•		
Unit	- 11	KA	NDOM	I VAK	IABLES	AND	SPE	CIAL	4			Peri	ods		9+3	5		

	DISTRIBUTIONS										
Random v	ariables-Probability mass function- Probability generating function	ion-moments-r	noment generating								
functions.	functions. Special discrete and continuous distributions: Binomial, Poisson, Geometric, Uniform, Exponential										
and Norma	and Normal distributions.										
Unit – I	II TESTING OF HYPOTHESIS	Periods	9+3								
Basic Defin	nitions – Testing of Hypothesis: Large sample tests based on Norma	al distribution f	for single mean and								
difference	of means -Tests based on t, Chi-square and F distributions for mea	n, variance and	d proportion - Test								
for Indepen	idence of Attributes & Goodness of Fit.										
Unit - I	V DESIGN OF EXPERIMENTS	Periods	9+3								
One way a	nd two way classifications - Completely Randomized design $-R$	andomized bl	ock design – Latin								
Unit _	V STATISTICAL OUALITY CONTROL	Periods	<u>0+3</u>								
Control cha	arts for measurements (X and R charts)- Control charts for attribute ceptance sampling	es (p,c and np	charts) – Tolerance								
	r	Total Periods	45+15=60								
Text Book	s										
1	Montgomery, D.C. and Runger, C.G., Applied Statistics and Prob	ability for Eng	gineers, 7 th Edition.								
1.	Wiley Students Edition, Wiley, 2020.		5, ·,								
2.	Ravichandran, J., Probability and statistics for Engineers, 1st Edition	on, Wiley Indi	a Ltd, 2012.								
References	3										
1.	Gupta S.C. and Kapoor V.K, Fundamentals of Mathematical Statis 2020.	stics, 12 th Editi	on, Sultan an Sons,								
2.	Devore, J.L., Probability and Statistics for Engineering and the Sc Learning, 2014.	iences, 8th Edi	ition, Cengage								
3.	Johnson, R.A., Miller, I. and Freund, J., Miller & Freund's Probab 9th Edition, Pearson Education, 2016.	ility and Statis	tics for Engineers								
4.	Ronald E.Walpole; Raymond H.M.yers; Stiaron L. Myers,"Probab and the Scientists",Pearson Publishers, 9 th Edition,2010.	ility and Statis	tics for Engineering								
5.	Ross, S.M., "Introduction to Probability and Statistics for Engine Elsevier, 2004.	eers and Scier	ntists", 5th Edition,								
E-Resource	28										
1.	https://online.stanford.edu										
2.	www.learnerstv.com/Free-engineering-Video-lectures										
3.	www.nptel.ac.in										

	VIVEKANAN (Autonomou]	NDHA COLL is Institution, Elayampalay	EGE O Affilia am, Tir	F EN ted to uchen	GINEE Anna gode –	RING F Universi 637 205	OR WOMEN (ty, Chennai)	Time	Kangerett Sam Go 101275 Research Research
Programme	B.E/B.Tech.	2023							
Department	CSE, IT & CST Semester I								IV
Course Code	Course NamePeriods Per WeekCreditMaximuLTPCCAE						mum N ESE	Marks Total	
U23IT404	LIFCCAESDatabase Management30034060Systems30034060							60	100
Course Objective	 The Main Obje Learn the f Understand Understand Analyze f techniques Learn the object 	ective of the c fundamentals d a database d the fundam how the int s which will h concepts of 1	course i s of data system ental co ternal nelp in j Distribu	s to, a mode using oncept storag physic ited da	els, rela ER dia ts of tra e stru- cal DB atabase	ational a agrams a ansaction ctures u design as, Datab	lgebra and SQL nd to learn norm n, concurrency co using different pase Security and	alizati ontrol a file a d NoS	on techniques and recovery and indexing QL
	At the end of the CO1: Construct	ne course, the	e studer es usin	nt shou g relat	uld be a	ible to, lgebra			KL K1
Course	CO2: Design d	latabase usin	g ER m	odel a	ind nor	malize t	he database		K3
Outcome	CO3: Understand how to handle transactions and maintain consistency of the database								K2
	CO4: Compar knowledge to t	e and contra une the perfo	ist vari ormance	ous in e of th	ndexing e datab	g strateg ase	ies and apply the	ne	K2
	CO5: Under Security and N	rstand the cosQL	oncept	s of]	Distrib	uted da	tabases, Databa	se	K2
Pre-requisites	-	<u> </u>							

	CO /PO Mapping (3/2/1 indicates strength of correlation)3-Strong,2–Medium,1–Weak												СО/Е Марј	PSO ping
	Programme Outcomes(POs)										Р	PSOs		
COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2
CO 1	3	2	2	2	2								3	2
CO 2	3	2	2	1	2								3	2
CO 3	3	2	2	2	2								3	2
CO 4	3	2	2	1	2								3	2
CO 5	3	2	2	1	2								3	2

Course Assessment Methods

Direct

- 1. Continuous Assessment Test I, II & III
- 2. Assignment / Quiz / Seminar
- 3. End Semester Examination

Indirect

1. Course - end survey

Content of the syllabus

Unit – I	Relational Databases	Periods	10					
Purpose	of Database System – Views of data – Data Models – Database Syst	em Architecture	e – Relational					
Algebra	Introduction to relational databases – Relational Model – Keys – Ent	ity-Relationship	model -SQL					
fundame	ntals – DML - DDL – DCL – TCL – DQL - Procedures, Functions, Tr	iggers and View	'S					
Unit – Il	Database Design	Periods	8					
E-R Diag	grams – Enhanced-ER Model – ER-to-Relational Mapping – Functio	nal Dependencie	es – Non-loss					
Decompo	osition - First, Second, Third Normal Forms, Dependency Preserv	vation – Boyce/	Codd Normal					
Form – J	oin Dependencies and fifth Normal Form							
Unit – Il	I Transactions	Periods	9					
Transacti	ion Concepts – ACID Properties – Schedules – Serializability - Need for	Concurrency-	Concurrency					
control -	-Two Phase Locking- Timestamp – Multiversion – Validation and S	Snapshot isolation	n – Multiple					
Granular	ity locking – Deadlock Handling – Recovery Concepts – Shadow Pagi	ng – ARIES Alg	orithm					
Unit – I	V Implementation Techniques	Periods	9					
RAID – I	File Organization – Organization of Records in Files – Data Dictionary	/ Storage – Colu	mn Oriented					
Storage-	Indexing and Hashing - Ordered Indices -Static Hashing - Dynamic H	ashing – Query (Optimization					
– Cost E	stimation							
Unit – V	Advanced Topics	Periods	9					
Distribut	ed Databases: Architecture - Data Storage - Transaction Processing- (Query processing	g – Database					
Security:	Authentication – Authorization and Access Control – SQL Injection - I	Introduction to N	IoSQL: CAP					
Theorem – Sharding - MongoDB Implementation								
Theorem	- Sharding - Wongobb Implementation							
Theorem	Total Pe	eriods 45						
Text boo	Total Pe	eriods 45						
Text boo	Total Pe Sharding - WongoDD Implementation Total Pe Sks: Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys	tem Concepts",	7 th					
Text boo 1.	Total Performance Statement and Statement a	eriods 45 tem Concepts",	7 th					
Text boo	Total Pe Sharding - WongoDD Implementation Total Pe Sks: Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys Edition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Databas	eriods 45 tem Concepts", se Systems" , 4 th	7 th Edition,					
Text boo 1. 2.	Total Personal Strategy - WongoDD Implementation Total Personal Strategy - MongoDD Implementation Methods - MongoDD Implementation Total Personal Strategy - MongoDD Implementation Methods - MongoDD	eriods 45 tem Concepts", se Systems" , 4 th	7 th Edition,					
Text boo 1. 2. 3	Total Personal Strength Personal Strengt Persona Strength Personal Strength Personal Strength P	eriods 45 tem Concepts", se Systems" , 4 th es, Security and	7 th Edition, Architectures					
Text boo 1. 2. 3.	Total Personal Persona Persona Personal Personal Personal Personal Personal P	eriods 45 tem Concepts", se Systems" , 4 th es, Security and	7 th Edition, Architectures					
Text boo 1. 2. 3. Reference	Total Period Total Period Nongond Implementation Total Period Nongond Implementation Total Period Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys Edition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Database Springer , 2020. Michael Kaufmann, SQL and NoSQL Databases: Modeling, Languag for Big Data Management, 2 nd Edition , Springer 2023. Ce books:	eriods 45 tem Concepts", se Systems" , 4 th es, Security and	7 th Edition, Architectures					
Text boo 1. 2. 3. Reference 1	Total Performance Total Performance Total Performance Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys Edition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Database Springer , 2020. Michael Kaufmann, SQL and NoSQL Databases: Modeling, Languag for Big Data Management, 2 nd Edition ,Springer 2023. C.J.Date, A.Kannan, S.Swamynathan, "An Introduction to Databases"	eriods 45 tem Concepts", se Systems" , 4 th es, Security and se Systems", 8 th	7 th Edition, Architectures					
Text boo 1. 2. 3. Reference 1.	Total Period Total Period Total Period Nongond Implementation Total Period Statume Period Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys Edition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Database Springer , 2020. Michael Kaufmann, SQL and NoSQL Databases: Modeling, Languag for Big Data Management, 2 nd Edition ,Springer 2023. Ce books: C.J.Date, A.Kannan, S.Swamynathan, "An Introduction to Database Pearson Education, 2006. Center State S	eriods 45 tem Concepts", se Systems" , 4 th es, Security and se Systems", 8 th	7 th Edition, Architectures					
Text boo 1. 2. 3. Reference 1. 2.	Total Period Total Period Total Period Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys Edition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Database Springer , 2020. Michael Kaufmann, SQL and NoSQL Databases: Modeling, Languag for Big Data Management, 2 nd Edition ,Springer 2023. Springer 2023. C.J.Date, A.Kannan, S.Swamynathan, "An Introduction to Database Pearson Education, 2006. Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of Database S	eriods 45 tem Concepts", se Systems" , 4 th es, Security and se Systems", 8 th ystems", 7th Ec	7 th Edition, Architectures Th Edition, dition, Pearson					
Text boo 1. 2. 3. Reference 1. 2.	Total Period Total Period Total Period Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys Edition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Database Springer , 2020. Michael Kaufmann, SQL and NoSQL Databases: Modeling, Languag for Big Data Management, 2 nd Edition ,Springer 2023. C.J.Date, A.Kannan, S.Swamynathan, "An Introduction to Database Pearson Education, 2006. Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of Database S Education, 2017 State State S S S S S S S S S S S S S S S S S S S	eriods 45 tem Concepts", se Systems" , 4 th es, Security and se Systems", 8 th systems", 7th Ec	7 th Edition, Architectures Th Edition, lition, Pearson					
Text boo 1. 2. 3. Reference 1. 2. 3. Reference 1. 2.	Total Period Total Period Nongond Implementation Total Period Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys Edition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Database Springer , 2020. Michael Kaufmann, SQL and NoSQL Databases: Modeling, Languag for Big Data Management, 2 nd Edition ,Springer 2023. Ce books: C.J.Date, A.Kannan, S.Swamynathan, "An Introduction to Database Pearson Education, 2006. Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of Database S Education, 2017 rces: Catabase S Colspan="2">Catabase S Colspan="2">S Catabase S Colspan="2" <td< td=""><td>eriods 45 tem Concepts", se Systems" , 4th es, Security and se Systems", 8th systems", 7th Ec</td><td>7th Edition, Architectures Th Edition, lition, Pearson</td></td<>	eriods 45 tem Concepts", se Systems" , 4 th es, Security and se Systems", 8 th systems", 7th Ec	7 th Edition, Architectures Th Edition, lition, Pearson					
Text boo 1. 2. 3. Reference 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Total Period Deks: Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Sys Edition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Database Springer , 2020. Michael Kaufmann, SQL and NoSQL Databases: Modeling, Languag for Big Data Management, 2 nd Edition ,Springer 2023. C.J.Date, A.Kannan, S.Swamynathan, "An Introduction to Database Pearson Education, 2006. Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of Database S Education, 2017 rces: https://www.geeksforgeeks.org/	eriods 45 tem Concepts", se Systems" , 4 th es, Security and se Systems", 8 th ystems", 7th Ec	7 th Edition, Architectures Th Edition, lition, Pearson					
Text boo 1. 2. 3. Reference 1. 2. 1. 2. 1. 2. 1. 2. 3. Reference 1. 2. 2. 2. 2. 2. 2.	Total Period Total Period Total Period Notified Database Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database Systedition, McGraw Hill, 2021. M. Tamer Özsu Patrick Valduriez, "Principles of Distributed Database Springer , 2020. Michael Kaufmann, SQL and NoSQL Databases: Modeling, Languag for Big Data Management, 2 nd Edition ,Springer 2023. Cze books: C.J.Date, A.Kannan, S.Swamynathan, "An Introduction to Database Pearson Education, 2006. Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of Database S Education, 2017 rces: https://www.geeksforgeeks.org/ https://archive.nptel.ac.in/courses/106/105/106105175/	eriods 45 tem Concepts", se Systems" , 4 th es, Security and se Systems", 8 th ystems", 7th Ec	7 th Edition, Architectures Th Edition, dition, Pearson					

	VIVEKANAN (Autonomou	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution, Affiliated to Anna University ,Chennai) Elayampalayam, Tiruchengode – 637 205							
Programme	B.E/B.Tech.		Progra	mme (Code		Regulation	2023	
Department	CSE & IT						Semester	IV	
Course Code	Course Name		Perio	ds Per	Week	Credit	Maximum Ma	rks	Total
U23IT405	Agile Softwar Engineering *	e	3	0	0	3	40	60	100
Course Objective	The Main Obje • Learn the develop • Apply the of inter • Provided technol • Underst • Introdu	ective of the c ne fundament oment method he principles est and releva e a good unde ogies and AF stand the produce the conce	course i cal prind ds and prind ance to erstand PIs. cess of pts, Te	is to ciples ractice the st ing of Kanba chniqu	and pra s of ag udent. softwa an, Floy ues of 2	ctices as ile softw re desig w and Po Agile do	ssociated with eavare developmen on and a set of so plicies evelopment and	testing	ne agile project
	At the end of the CO1: Apply t	ne course, the	e studer ent eng	nt shou gineeri	uld be a	able to, ks, des	ign concepts ar	ıd	KL KA
Course	analyze the var	ious software	e devel es and	opmer apply	nt mode Scrum	els for a	given scenario		K2
Outcome	CO3: Create m	nodel applica	tions us	sing X	P, Lea	n and Ka	anban practices		K2 K4
	CO4: Outline	the Concepts	of Kar	ıban, H	Flow an	nd polici	es		K2
CO5: Make use of various software testing techniques to test the software systems									K3
Pre-requisites	-								

	CO /PO Mapping (3/2/1 indicates strength of correlation)3-Strong,2–Medium,1–Weak													
	Programme Outcomes(POs)													
COs	PO 1 PO 2 PO 3 PO 4 PO 5 PO 6 PO 7 PO 8 PO 9 PO 10 PO 11 PO 12												PSO1	PSO2
CO 1	3	2	1										3	2
CO 2	3	2	1										3	2
CO 3	3	2	1										3	2
CO 4	3	2	1										3	2
CO 5	3	2	1										3	2

Course Assessment Methods									
Direct									
1. Continuous Assessment Test I, II & III									
2. Assignment / Quiz / Seminar									
3. End-Semester Examination									
Indirect									

1. Course - end survey

Content of the syllabus

Unit – I	Process Models, Analysis and Design	Periods	9
Software	process structure - Process models: Waterfall model -	Incremental proce	ss models –
Evolution	ary process models - Requirements engineering - Requirements	nents analysis - Sc	enario Based
Modeling	- Class-Based Modeling - Flow Oriented Models - Behavioral	Models- Design Con	cepts
Unit - II	Ague Principles and Scrum	Periods	9
Understan	ding the Agile Values – Agile Principles – Agile Project - Sc	rum and Self-Organ	izing Teams -
Basic patt	ern for a Scrum Project – Rules of Scrum – Self-Organizing Tea	ams - Scrum Values -	- Daily Scrum
– Sprints,	Planning and Retrospectives - Scrum Planning and Collectiv	ve Commitment - U	Jser stories –
Condition	s of Satisfaction – Story Points and Velocity – Burn down Char	ts – Planning and Ru	nning a Sprint
– General	ly Accepted Scrum Practices – JIRA Tool.		
Unit – III	XP and Incremental Design, Lean	Periods	9
Primary P	ractices of XP – An effective mindset starts with the XP values	 Understanding the 	XP principles
– Feedbac	k Loops - Lean Thinking – Commitment, Options Thinking and	d Set Based Develop	ment – Create
Heroesan	l Magical Thinking – Eliminate Waste – Value Stream Map –	Deliver as Fast As P	ossible – WIP
Area Cha	t – Pull Systems		_
Unit – IV	Kanban, Flow and Policies	Periods	9
The Princ	iples of Kanban, Experimental Evolution - System, Code, Imp	roving Your Process	with Kanban,
Visualize	the Workflow, Limit Work in Progress, Measure and Manage	e Flow, Managing Fl	ow with WIP
Limits, M	ake Process Policies Explicit - Emergent Behavior with Kanban	1.	
Unit – V	Software Testing Fundamentals	Periods	9
Software	testing strategies: Strategic approach - Issues - Test strategies	gies for conventiona	al and Object
Orienteds	oftware –Validation and System testing – Debugging – Testing	g conventional applic	cations: White
box testin	g – Basis path testing – Control structure testing – Black box	k testing – Software	configuration
managem	ent – SCM repository – SCM process.		
	To	otal Periods 45	
Text bool	KS:		
1.	Roger S. Pressman & Bruce R. Maxim, "Software Engineeri 7 th Edition, McGraw-Hill Education, 2019.	ng: A Practitioner's	Approach",
2.	Andrew Stellman and Jennifer Greene, "Learning Agile: U and Kanban" First Edition, O'Reilly Media Inc. 2015	nderstanding Scrum,	XP, Lean
Reference	books:		
1	Hazza & Dubinsky, "Agile Software Engineering, Series: U	Indergraduate Topics	in Computer
1.	Science", Springer, VIII edition, 2009		
2.	Dingsoyr, Torgeir, Dyba, Tore, Moe, Nils Brede (Eds.), "Agi Research and Future Directions", Springer-Verilag Berlin Heid	le Software Develop delberg, 2010	ment, Current
3.	Kevin C. Desouza, "Agile information systems: cond management". Butterworth-Heinemann, 2007.	ceptualization, cons	truction, and
E-resour	2 :		
1.	https://www.geeksforgeeks.org/software-engineering-agile-software-engineering-agil	ftware-development/	

		VI (.	VEKA Autono	NAND mous I Elaj	HA CO nstitutio yampal	DLLEG on Affili ayam, Ti	E OF ated to ruche	ENGIN Anna ngode -	NEEF Unive - 637	RING ersity, 205	F OR V Chenn	VOMI ai)	EN	Naragement System 150 30012015 Veterland 0 51/06205 0 91/06205	
Progra	mme	B.E. /	B.Tech	•		Prog	ramm	e code			Reg	ulatior	ı	2023	
Depart	ment	CSE &	& IT								Se	mester	r	IV	
Course	rode		C	urse n	ame		Pe	riods pe	er wee	ek C	Credit	N	laximur	n Marks	
Course C	Joue		C	Juise ne	unic		L	Т	Р	С		CA	ESE	Total	
U23CS	408	Design	and A	nalysis	s of Alg	orithms	3	0	0	3		40	60	100	
		The st	udent s	hould b	be made	e to,									
Cours	se	• A	nalyze	the asy	mptotio	e perforn	nance	of algo	rithms	s.					
Object	ive	• A	pply th	e conce	ept of D	Divide an	d cono	quer and	d gree	dy alg	orithm	S			
Ŭ		• D	emons	trate a f	familiar	ity of Dy	namio	e Progra	ammi	ng.					
		• A	pply in	nportan	t conce	pt of Ba	cktrac	king.							
		• S	ynthesi	ze effic	cient alg	gorithms	for N	P Probl	ems						
		At the	end of	the cou	irse, the	e student	shoul	d be ab	le to,					KL	4
		CO1:	Analy	vsis algo	orithm	techniqu	es and	analyz	e asy	mptoti	c runti	me co	mplexit	y Ka	,
Course of algorithms.												<u> </u>	1		
Outcol	me	and conquer and Greedy algorithm.													}
		CO3: Understand and design algorithms using dynamic programming												КЗ	5
		CO4: Apply concepts of Back tracking												K4	
		CO5.	Synthe	size of	ficient	lgorithr	s for	NP prof	alome						
D		005.	Synthe			ugonum	15 101 1	NI PIO	Jiems					K4	•
Pre- requisit	es	-													
requisit	CC) / PO N	lapping	ζ.									CO/PS	0	
	(3/2	2/1 indic	ates str	ength of	correlat	tion) 3-St	rong, 2	– Medi	um, 1	- Weal	с <u> </u>		Mappi	ng	
COs		-	-]	Program	me Outco	omes (I	POs)		DO1 0	PO11	DO14	PSOs	DEO 2	
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	POI0	POII	POI2	PSOI	F502	
CO 1	1	3	3	2									1	2	
CO_2	2	2	2	3									2	2	\dashv
CO 4	2	3	2	3									2	3	_
CO 5	2	3	2	3									3	3	
				_											
Course	Assess	sment	Metho	ods											
1	Contir	υμομε Δ	ssecom	ent Teo	stІПя	ь Ш									
2.	2. Assignments / Seminar/Quiz														
3.	3. End-Semester examinations														
Indirec	t														
1. 0	Course	e - end s	urvey												
Content	of the	syllabu	IS												

Unit -	I ALGORITHM ANALYSIS AND RECURRENCE EQUATION	Periods 9								
Models of	f computation- algorithm analysis- time and space complexity- average and	worst case analysis-								
lower bou	nds- Recurrence Equations-Solving recurrence equations – Analysis of linear s	earch.								
Unit – I	II DIVIDE AND CONQUER & GREEDY ALGORITHMS	Periods 9								
Divide Ar	nd Conquer: General Method - Binary Search - Finding Maximum and Min	imum – Merge Sort								
Quick sort. Greedy Algorithms: Prim's algorithm - Kruskal's Algorithm - Dijkstra's Algorithm- Knapsack										
Problem –	- Huffman trees and codes									
Unit – I	III DYNAMIC PROGRAMMING	Periods 9								
General M	Aethod – Multistage Graphs – Warshall's and Floyd's algorithm – Optimal bi	nary search trees $-0/1$								
Knapsack	 Traveling salesperson problem. 									
Unit – I	IV BACKTRACKING & BRANCH AND BOUND	Periods 9								
n - Queens	s problem – Subset Sum Problem – graph coloring - Hamiltonian Circuit proble	m – knapsack problem.								
Branch an	d Bound: LIFO and FIFO search – assignment problem									
Unit - V	Unit - V PROBLEM CLASSES Periods 9									
NP-Comp Completer	leteness: Polynomial Time, Polynomial-time verification, NP Completeness ness Proofs, NP Complete Problems.	and reducibility, NP -								
	То	tal Periods 45								
Text Bool	ks:									
1.	T.H.Cormen, C.E.Leiserson, R.L.Rivest, C.Stein, –Introduction to Algorithms Hall India, 2022.	sl, 4 th Edition, Prentice-								
2.	Anany Levitin, "Introduction to the Design and Analysis of Algorithms Education, 2017	s, 3rd Edition, Pearson								
Reference	es:									
1.	Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, Fundamentals of C 2nd Edition, 2008.	Computer Algorithms								
2.	J. Kleinberg and E. Tardos, -Algorithm Design, Pearson International Edition.	, 2005.								
E-Resour	rces:									
1.	https://edutechlearners.com/download/Introduction_to_algorithms-3rd%20Ec	lition.pdf								
2.	http://www.cs.sjtu.edu.cn/~jiangli/teaching/CS222/files/materials/Algorithm9	620Design.pdf								
3.	www.nptel.ac.in									

	2	VIV	TUAN			TIF	TE OF	F	TNI	FFD	NC F		OMEN	T				
		VIV	ERAr (NAINDI Autonom	HA UU 1011s Insti	LLE.	JE UI Affiliate	d to A	דעות nna U	Inivers	ING FU	OK V nnaj)	UNIED		A second			
	•				Elayar	npalaya	m, Tiru	chengo	de - de	<u>637 20</u>	<u>15</u>				antiput e roman			
Program	nme	B.E. / H	B.Tech	•]	Progra	mme	Code	e		Reg	ulation		2023			
Departr	nent	CSE, I	T & C	ST								Se	emester		IV			
Course (ode		Cours	se Nam	P]	Period	s Per	Wee	k (Credit		Maxi	mum M	Iarks			
Course C	Joue		Court	se i tuin			L	Т	P		С		CA	ESE	Total			
U23CT4	06	Opera	ting S	ystem	S		3	0	2		4		50	50	100			
			•]	Fo unde	erstand	the op	erating	g syste	em s	tructu	ires.							
			•]	Fo leari	n Proce	sses, T	Thread	s and	anal	yze S	chedul	ing al	gorithm	s.				
Course			•]	Го have	e a basio	c unde	rstand	ing of	Dea	locl	ks and	analy	ze memo	ory mai	nagement			
Objectiv	'e		S	cheme	s.													
			•]	Γo be fa	amiliar	with F	File sys	tem r	nana	geme	nt.							
To be familiar with the basics of virtual machines																		
		At the	end of	f the co	urse, th	e stud	ent sho	ould b	e abi	le to,				Kn	owledge			
	Leve													Level				
CO1: Gain knowledge on operating system structures.											K2							
Course	<u>م</u>	CO2: Analyze various scheduling algorithms and process synchronization.													K3			
Outcom		CO3: Investigate deadlock prevention and avoidance algorithms and													K3			
		compare various memory management schemes.													КJ			
		CO4: Illustrate the functionality of file systems.													K3			
		CO5:	Under	stand tl	ne basic	conce	epts of	virtu	al ma	achin	es.			K2				
Pre-		NI:1																
requisite	es	INII																
					CO/P	O Ma	pping							CO/P	SO			
	(3/	/2/1 indi	cates stu	rength o	of correla	ation) 3	3-Stron	g, 2 –	Medi	ium, 1	– Wea	k		Mapp	ing			
Cos					Program	nme O	utcome	es (PO	s)					PSOs				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO	8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO 2			
CO 1	3	1	1	1						1	10	1	2	2	2			
CO 2	2	3	1	3	1					3	2	2	3	2	2			
CO 3	2	2	3	3	2					3	1	1	2	2	1			
CO 4	2	2	1	2	1					1	3	2	1	2	1			
CO 5	2	3	3	2	1					3	1	2	1	2	2			
Course A	Assessn	nent Me	ethods															
Direct																		
	Contir	nuous A	ssessme	ent Test	t I, II &	III												
2. Assignments /seminar/ Quiz/ Model Lab																		
2	E. 1 C																	

Indirect

1. Course - End survey

Content of th	e syllabus									
Unit – I	INTRODUCTION AND OPERATING SYSTEM STRUCTURES	Periods	9							
Introduction	- Computer System organization - Computer-System Architecture- Op	erating-System	n Operations –							
Operating Sys	tem Services - User Operating System Interface - System Calls - System	Services - Ope	erating-System							
Design and Im	plementation- Operating-System Structure.	T								
Unit - II	PROCESS MANAGEMENT	Periods	9							
Process Conc	ept - Process Scheduling -Operations on Processes - Inter-process	Communication	on; Threads -							
Multithread M	Iodels - Threading issues; CPU Scheduling -Basic Concepts - Scheduling	duling Criteria	- Scheduling							
Algorithms; F	rocess Synchronization - Critical-Section Problem - Synchronization	h Hardware -	Semaphores -							
Monitors -Clas	ssic problems of Synchronization.	D ! 1	0							
Unit – III	DEADLOCKS AND MEMORY MANAGEMENT	Periods	9							
System Model - Deadlock Characterization - Methods for handling Deadlocks - Deadlock Prevention - Deadlock										
avoidance - L	eadlock detection - Recovery from Deadlocks; Main Memory- Swap	pping - Contig	uous Memory							
Paging - Page	Replacement - Allocation of frames - Thrashing	, virtuai Merric	bry - Demand							
Unit - IV	FILE SYSTEM MANAGEMENT	Periods	9							
File System Ir	terface File Concept Access Methods Directory Structure File St	etem Mountin	g Protection:							
File System Ir	nplementation - Directory Implementation - Allocation Methods - Free	e-space Manag	ement.							
T T · 4 T 7	STORAGE MENAGEMENT AND	De rie de	0							
Unit - v	VIRTUALIZATION	Periods	9							
Mass-Storage History - Bea implementation	Structure – Disk Scheduling and Management - Swap-Space Managements and Features - Building Blocks –Introduction to types of ns - Virtualization and Operating-System Components.	gement; Virtua Virtual Machi	al Machines – nes and their							
		Total Pe	riods 45							
	Suggested List of Experiments		CO's							
1. Instal	lation of windows operating system		CO1							
2. Illustr	ate Shell Programming		CO1							
3. Proce	ss Management using System Calls : Fork, Exec, Getpid, Exit, Wait,	Close	CO1							
4. Simu	ation of CPU scheduling algorithms :FCFS, SJF, Priority and Round	l Robin	CO2							
5. Imple	ment process synchronization using semaphores		CO2							
6. Simu unsaf	ation of Banker s algorithm to check whether the given system is in set state	safe state or	CO3							
7. Imple fit	mentation of Dynamic memory allocation algorithms: First-fit, Best	-fit, Worst-	CO3							
8. Imple	8. Implementation of Page Replacement Algorithms : FIFO, LRU and Optimal CO3									
9. Implement the following File Allocation Strategies : Sequential, Indexed, Linked CO4										
10. Install Linux operating system using VMware CO5										
T4 D 1	Lecture	45: Practical	30; Total: 75							
1 ext Books	rew S. Tanenhaum "Modern Operating Systems" Dearson 5th Editic	on 2022 Norr	Delhi							
	ham Silberschatz Deter Baer Calvin and Grag Gagna "Operation	The System Con	cents" 10th							
2 Adia Edit	ion, John Wiley and Sons Inc., 2018	5 System Con	ocpis, 10m							

Referenc	res									
1	William Stallings, "Operating Systems: Internals and Design Principles", 7th Edition, PrenticeHall,									
1.	2018.									
2	Ramaz Elmasri, A. Gil Carrick, David Levine, "Operating Systems - A Spiral									
۷.	Approach", TataMcGraw Hill Edition, 2010.									
Tools Re	quired									
1.	PC, Linux / Windows OS, C Compiler, VMWare / VirtualBox									
E-Resour	rces									
1.	https://www.geeksforgeeks.org/operating-systems									
2.	https://www.tutorialspoint.com/operating_system/ index.htm									
3.	youtube.com/playlist?list=PLDW872573QAb4bj0URobvQTD41IV6gRkx									

	ADMAN EMPON			VIVEK (Autor	KANAN nomou Ela	NDHA Is Insti Ayamp	COLL itution, alayam	E GE O Affilia , Tirucl	F ENC ted to hengoo	FINEE Anna U le – 63	RING F Universit 7 205	OR WO	MEN nai)	Tit Medal	Reception Seals 60 M0 201 8 Packas 8 Packas	
Pı	rogram	me		B.E. / B	.Tech	•	Programme CodeRegulation2023 G SemesterIII / IV									
D	epartm	ent		CSE,I7	۲ &CS	T						Semeste	r	III / IV		
C	ourse (ode		Course	Name			Perio	ds Per	Week	Credit	Maxir	num Ma	rks	I	
								L	Т	Р	С	CA		ESE	Total	
1	[] 23IT	406		Datab	ase M	anage	ement	0	0	2	1	60		40	100	
		100		Syster	ns Lal	borate	ory ^{\$}									
				The st	udent	should	be ma	de to,			· ·					
				•	Learr	n and i	Implem	ent imp	ortant	comm	ands in	SQL.				
Learn the usage of nested and joint queries. Linderstand functions, proceedures and proceedural extensions of data																
• Understand functions, procedures and procedural extensions of datab												bases.				
				•	Unde	erstanc	l design	and in	npleme	entation	n of typi	cal data	base ap	plicatio	ons.	
• Familiar with the use of a front end tool for GUI based application development													pplication			
development. At the end of the course, the student should be able to, KL																
At the end of the course, the student should be able to,												KL				
				CO1:	Create	e datab	bases wi	th diffe	erent t	ypes of	key cor	istraints	•		K3	
C	ourse	•		CO2: DCL o		K4										
	ucom	e		CO3: and in	5	K4										
				CO4:	Create	and m	anipulat	e data u	sing N	oSQL d	atabase				K3	
				CO5:	Create	a Simp	ole Proje	cts usin	g real l	ife data	base app	lications			К3	
P	re-requ	uisites		-												
							CO /D	O Marri								
				(3/2/1)	indicate	sstreng	thofcorre	lation)3	ping -Strong	.2–Medi	um.1-We	ak			Johnson Japping	
	Car			<u> </u>		<u> </u>		Progra	mme O	utcomes	(POs)	-			PSOs	
		PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1 2	PSO2	
	CO 1 CO 2	3	3	3	3	2					2	1		1	1	
	CO 3	3	2	2	3	2					2	1		3	1	
	CO 4	2	2	2	2	2					$\frac{2}{2}$	1		1	1	
	03	5	5	2	Z	2					Z	1		2	2	
C	ourse A	Assessi	ment	Method	s											
]	Direct		1 -													
	1. Prelab and Post Lab / Viva Questions															
			2. h 3 t	Record	octor F	vamine	ation									
	[ndirec	t	J. I	nu-seill	CSICI E.	Aannii	011									
		•	1. (Course -	end sur	vev										
						2]	

Sugg	ested List of Exp	eriments					CO's
-	Create a table	e called Employed	e with the fo	ollowing str	ucture.		
		Nor	no Trun		1		
		Fm	ne Typ	e ber			
		Eng	me Var	$\frac{1001}{2}$			
		Job	Vare	char2(10)			
		Mgi	· Nun	nber			CO1
1			·		-		001
1.	a.	Add a column co	mmission w	ith domain	to the Emp	loyee table.	
	b.	Insert any five real	cords into th	e table.			
	с.	Update the colum	n details of	job			
	d.	Rename the column	nn of Emple	oy table usi	ng alter coi	nmand.	
	e.						
	a. Create a user	and grant all perr	nissions to t e employee	he user.	se rollback	Check the result	
2.	c.Add primary k	kev constraint and	l not null co	nstraint to t	the employ	ee table.	CO1
	d.Insert null val	ues to the employ	ee table and	l verify the	result.		
3	Queries using A	Aggregate functio	ns, GROUF	P BY, HAV	VING and C	Creation and	CO^{2}
5.	dropping of Vie	WS.					02
	Create a row lev	el trigger for the	customers	table that	would fire	for INSERT or	
	UPDATE or D	ELETE operation	is performe	d on the (CUSTOME	ERS table. This	
	trigger will displ	ay thesalary diffe	rence betwe	en the old v	values and	new values:	
	ID		AGE		DRESS	SALARY	
4.	1	Allve	24		adanna	2000	CO2
	3	Catri	27		Suntur	4000	
	<u> </u>	Dena	23	H	/derabad	5000	
	5	Eeshwar	20	K	Surnool	6000	
	6	Faroog	28		Nellur	7000	
				1 . 00	T		
Э. С	Write user define	transactions and s	tored proce	dures in SQ	<u>l</u> L.	~	<u>CO3</u>
0.		x transactions and	I realize DC			8.	03
7.	Create Docume	nt, column and gr	aph based d	ata using N	oSQL data	base tools.	CO4
	Case Study usin	g any of the real	ife database	e application	ns from the	following list	
	1)Inventory Ma	nagement for a E	Mart Grocer	ry Shop			
	2) Society Finar	ncial Management	t				
	3) Cop Friendly	App-E-seva					
	4) Property Mar	nagement – e-Mal	1				
8	5) Star Small an	d Medium Banki	ng and Fina	nce			CO5
0.	i) Build Entity	Model diagram	C				005
	The diagram	should align w	vith thebusi	ness and fu	nctional go	als stated in	
	the application	on. Apply Normal	ization rule	s in designi	ng the table	es in scope.	
	ii) Prepared	applicable views	, triggers (fo	or auditing	purposes),	functionsfor	
	enabling ente	erprise grade featu	ires.				
	iii) Build PL	SQL / Stored Pro	ocedures for	Complex F	Functionalit	ties, ex EOD	

	Batch Processing for calculating the EMI for Gold Loan for each eligible Customer. iv) Ability to showcase ACID Properties with sample queries with appropriate settings	
	Total Periods	45
E-Resour	ces	
1.	https://www.javatpoint.com/	
2.	https://www.geeksforgeeks.org/	

CAREER TRACK COURSES

Signature of the BoS Chairman

TRACK 1 – ENTERPRENEURSHIP

			VIVEF (Auto	KANAI onomou H	NDHA Is Institi Elayamj	COLLI ution Af	EGE (ffiliate 1, Tiruc	DF E d to <i>A</i> cheng	NGIN Anna ode –	VEE Uni - 63	E RIN versit 7 205	G FOR V y, Chenr	WOMI nai)	EN	Internet See See See See See See See See See S	
Prog	gramme		B.E. /	B.TE(CH	Р	rograr	nme o	code	1	.04	Reg	ulation	ı	2023	
Depa	rtment	Infe	ormati	on Tec	hnolog	y						Se	emeste	r	IV	
Carry				Com	Nom	•]	Perio	ls pei	r we	eek	Credit	Ν	laximur	n Marks	
Cours	se code			Cours	se main	e]	L	Т		Р	С	CA	ESE	E Total	
U230	CTCE1	Ent Bus	repren siness N	eurial Aodel (Minds Canvas	et and		0	0		2	1	60	40	100	
Cor Obje	urse ective	The	 Cultivate an entrepreneurial mindset that embraces innovation and risk-taking. Learn the components of the Business Model Canvas and develop skills using the Business Model Canvas as a tool for business planning. Design innovative business models based on customer needs and market opportunities. Understand the process of transforming a business model into a comprehensive business plan. Understand the application processes and legal implications of business licenses and permits. 													
		At t	At the end of the course, the student should be able to, KL													
CO1: Explain the key traits and behaviors of successful entrepreneurs.												К2				
		CO	2: Iden	tify and	d descri	be the c	compoi	nents	of the	e Bı	usines	s Model	Canva	s.	K2	
Cou Oute	Course Outcome		CO3: Design innovative business models tailored to specific customer needs and market conditions.													
		CO eler	CO4: Demonstrate the ability to write comprehensive business plans, incorporating elements such as market analysis, financial projections, and operational strategies.													
		CO bus	5: Iden inesses	tify dif	ferent t	ypes of	licens	es an	l peri	nits	neces	ssary for	variou	s types	of K2	
Pi	re-	_														
requ	isites															
	(2)	7 /1 ind	liaataa a	tuan ath	CO/I	PO Map	ping Strong	2	1 din	1	Wa	1-		CO/	/PSO	
COs	(3/.	2/1 1110	licates s	uengui	Progra	mme Ou	tcomes	$\frac{2-1}{1000}$		111, 1	l - wea	1K		PS	SOs	
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO	B PC)9	PO10	PO11	PO12	PSO1	PSO2	
CO 1	1	1	2	1	1			1	2	2	1	3	3	1	1	
CO 2	2	1	3	3	2			1	2	2	1	3	3	1	1	
CO 3	2	1	3	2	3			1	2	2	1	3	3	2	2	
CO 4	1	1	3	1	2			1	2	2	1	3	3	1	1	
	-	-	-	<u> </u>		<u> </u>		<u> </u>			-	-	-			
Course Direc 1 2 Indir 1 Conter	Course Assessment Methods Direct 1. Continuous Assessment through Reviews 2. End Semester Examinations Indirect 1. Course - end survey Content of the syllabus															
		~)0														

Unit -	- I	Introduction to Entrepreneurial Mindset	Periods	6					
Introduction-Evolution of the Concept of Entrepreneur - Characteristics of Successful Entrepreneurs - The Charms of Becoming an Entrepreneur - The Entrepreneurial Decision Process –Need and types of Entrepreneur – Role of Entrepreneurship in Economic Development -Women Entrepreneurship and Rural Entrepreneurship – Case Study – Opportunities Identification and Selection									
Unit –	·II	Periods	6						
Definitio Channels	n of a l s and P	Business Model- Types of Business Models -Customer Segments - Valu artners - Customer Relationships - Revenue Model and Streams	e Proposition	S —					
Unit –	III	Designing and Testing Business Models	Periods	6					
Key Resources - Key Activities - Key Partnerships - Cost Structure - Prototyping Business Models - Evaluating Business Models									
Unit –	IV	Business Model to Business Plan	Periods	6					
Business Plan - reasons for writing a Business Plan - who reads a business plan and what they're looking for - guidelines for writing an effective business plan - business plan Outline - present a business plan to potential investors.									
Unit -	V	Licenses, Permits and Funding	Periods	6					
Ethical culture in the entrepreneurial ventures – Dealing Effectively with legal Issues - Obtaining business licenses and permits – forms of Business Organization – Creating new-venture team – Skill Profile – case study – Need for Funding –Sources of Personal Funding, equity funding, debt financing									
		T	otal Periods	30					
Text Bo	oks								
1	Khanka. S.S., "Entrepreneurial Development" S.Chand and Co. Ltd., New Delhi, 2011, Revised Edition								
2	Osterwalder, A., & Pigneur, Y. "Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers" John Wiley & Sons, Inc., 2010								
3.	R. Duane Ireland Bruce R. Barringer "Entrepreneurship: Successfully Launching New Ventures", Pearson Education. 2020, 6 th Edition								
Reference	ces								
1.	Donald F Kuratko, "Entrepreneurship – Theory, Process and Practice", Cengage Learning, 2016. 10 th Edition								
2.	Ries, E." The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses ", Currency, 2017, 9th Edition								
E-Resou	rces								
1.	https://fastercapital.com/content/Entrepreneurship-Education-via-Business-Model-Canvas.html								
2.	https://online.bath.ac.uk/articles/business-models								
3.	https	://creately.com/guides/business-model-canvas-explained/							

TRACK II / III / IV – COMPETITIVE EXAMINATION / HIGHER STUDIES / PLACEMENT

	A DATE OF THE PARTY OF THE PART	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (Autonomous Institution Affiliated to Anna University, Chennai) Elayampalayam, Tiruchengode– 637205										TWYheirland CESTIFED System CESTIFED System	geneti m Xorans Nation Nation Nation				
Program	mme	B.	Гесh.				Programme code 104 Regulation				ation	2023					
Departi	ment	Inf	formati	on Te	chnolo	ogy						Semes	ter	IV			
Course Code U23CTCP3		Course Name							Periods per week			Cre dit	M	Maximum I		`ks	
									·	Т	Р	С	CA	ESE		Total	
U23CT	ГСР3	Ve an	rbal, Q d Reaso	uantit ning -	ative . - II	Aptitı	ıde	2	2	0	0	1	40	60 100			
Cours Obje	se ctive	 The student should be made to, Identify and begin to apply the language features Understand the mathematical techniques for solving the real life problems Use number theory arguments to justify relationships involving divisors, multiples and factoring Perform well in all competitive exams 															
		At	the end	of the	cours	e, the	studen	t shou	ld be a	able to,	,				K	Lnowledg e Level	
		CC	D1: Use	langu	age th	rough	acquis	ition o	of gran	nmar r	ules					K2	
Course	1e	CC an	D2: Den d relatio	nonstra onship	ate the s	use of	f math	ematic	al rea	soning	by jus	tifying tł	ne patter	ns		K2	
Outcon		CC	CO3: Face external competitive exams													K3	
		CO4: Solve a question in a fraction of minute using shortcut methods													K3		
		CO5:Enhance their problem solving skills and logical Skills													K4		
Pre-																	
requi	isites																
CO / PO Mapping (3/2/1 indicates strength of correlation) 3-Strong, 2 – Medium, 1 – Weak CO/PSO Mapping									oping								
COs					Progra	amme	Outcon	mes (P	Os)					PS	SOs	Os	
	PO	РО	PO 3	PO	PO	PO	PO	PO	PO	PO	PO	PO 12	PSO	1 PS	02	PSO3	
<u>CO 1</u>	1	$\frac{2}{2}$		4	5	6	7	8	9	10	11	3	1	,	2		
CO 1 CO 2	3	3		2	2					3		3	2		3		
CO 3	3	3		3	2					3		3	3		3		
CO 4	3	3		2	3					2		2	3	,	3		
CO 5		2		2	2					2		2	3		3		
Course Assessment Methods Direct 1. Continuous Assessment Test I, II & III 2. Assignments / Seminar/Quiz 3. End-Semester Examination Indirect 1. Course -end survey																	
Content of the syllabus																	

Unit	-I VERBAL ABILITY	Periods	4								
Verbal A	erbal Analogy, Sentence completion, Gen-Z lexis										
STATEMENT ANALYSIS: Statements and Conclusions, Statements and Assumptions, Statements and											
Agreements, Cause and effect, Making Judgements.											
Unit-	II PROFIT AND LOSS	Periods	8								
PROBI	PROBLEMS ON PROFIT AND LOSS PERCENTAGE: Profit Percentage, Cost Price and Selling Price are										
equal, C	ost Price and Selling Price are different, Selling Price alone, Selling Price same	e for two obje	cts, Selling								
Price an	nd Cost Price are compared, Mixture, Profit Percentage and Loss Percentage	e are equal,	False rate,								
Problem	Problems on Cost Price, Selling Price, Profit, Discount, Successive Discount and Discount Percentage.										
SIMPL	E AND COMPOUND INTEREST: Simple Interest: Find Principal, Amount,	Rate of Intere	st, Number								
of Years	s, Simple Interest based on lend into two parts, in case of instalments. Compound	l Interest: Find	1 Principal,								
Amount	, Rate of Interest, Number of Years, Compound Interest, Simple Interest in co-	relation with	Compound								
Interest,	Instalments, Population, Present Worth.										
Unit –	III TIME AND WORK	Periods	6								
Chain F	Rule, Combination of people working together, Individuals working togethe	r, Joining and	1 Relieving,								
and Clo	cy Ratio Model, Works and Wages, Pipes open together: Doubling, Efficiency R sing Capacity based model	atio Model, P	ipes opening								
Unit-	IV TIME, SPEED AND DISTANCE	Periods	6								
Basic m	odels, Ratio based model. Average speed based model. Relative speed based mo	del. Algebra h	ased model.								
Problem	is on Trains, Boats and Streams, Race and Games. Circular Track, Game based	model.									
Unit-	V LOGICAL REASONING	Periods	6								
DIREC	TION SENSE: Direct yourself, based on Angle. Directional reference point, co	rrect map bas	ed on wrong								
map, Di	rection in Clocks, Shadowing.	· · · · · · · · · · · · · · · · · · ·	8								
SEATI	NG ARRANGEMENT: Linear Seating Arrangement, Single row Uni-Direc	tional and Bi-	-Directional,								
Dual ro	Dual row, Triple row, Square, Rectangular and Triangular Arrangement. Seating Arrangement in photograph.										
Circular	Arrangement, Inside and Outside (Linear and Circular), Concentric Arrangement	ent.									
	Total Periods 30										
Text bo	oks										
1.	Rajeev Varma, "Fast Track Objective Arithmetics", Arihant Publications, 20	24									
2.	R.S. Aggarwal, "Modern Approach to Logical Reasoning", S Chand Publishing, 2022										
3.	SP Bakshi, "Objective General English", Arihant Publications, 2024										
References											
1.	R.S. Aggarwal, "Quantitative Aptitude for Competitive Examinations", S Chand Publishing, 2013										
2.	Dinesh Khattar, "The Pearson guide to Quantitative Aptitude for Competitive Examinations", 3 rd										
	edition, 2016										
3.	Arun Sharma, "How to Prepare for Logical reasoning for CAT", McGraw Hill Education, 2014										
4.	Jaikishan and Premkishan, "How to Crack Test of Reasoning", Arihant Publications, 2016										
5. R.S. Agarwal, "A modern Approach to verbal and non-verbal reasoning", S Chand Publishing, 2018											
E-Kesources											
1.	Aptitude: <u>https://www.indiabix.com</u>										
2.	Reasoning: https://placement.freshersworld.com										
3.	Verbal: <u>https://testbook.com</u>										