GOVERNMENT ARTS COLLEGE (AUTONOMOUS), SALEM-7

# **B.Sc. Computer Science**

# **SYLLABUS**

(Effective from the Academic Year 2022-2023)

## **Department of Computer Science**

#### Vision

To provide an outstanding student experience, underpinned by high quality teaching and learning, resulting in career choices in the IT industry that extend beyond programming / software development and into latest fields like data science, data analytics.

#### Mission

- To provide effective learning ambiance to gain an excellent skill set to pursue a wide range of careers in the changing and challenging technological world.
- > To help obtain wide-reaching technical skills and knowledge of latest technologies.
- > To facilitate burgeoning researchers in the emerging areas of the discipline.

#### **Programme Educational Objectives (PEO)**

- To effectively communicate computing concepts and solutions to bridge the gap between academia and computing industries to initiate and create innovation.
- Effectively utilize the gained knowledge of computing principles and mathematical theory to develop sustainable solutions to current and future computing problems.
- To impart graduate attributes with employability skills to face current cut-throat global challenges.

#### **Graduate Attributes (GA)**

- 1. **Disciplinary knowledge**: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.
- 2. **Information/digital literacy**: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.
- 3. **Communication Skills:** Ability to express thoughts and ideas effectively in writing and orally; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.
- 4. **Cooperation/Team work:** Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group.

- 5. Leadership readiness/qualities: Capability for mapping out the tasks of a team, formulating an inspiring vision, building a team who can help achieve the vision, and using management skills to guide people to the right destination, in a smooth and efficient way.
- 6. **Problem solving**: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.
- 7. **Analytical reasoning** : Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; **Scientific reasoning**: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.
- 8. **Moral and ethical awareness/reasoning:** Ability to embrace moral/ethical values in conducting one's life; avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues.
- 9. **Multicultural competence**: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
- 10. **Self-directed learning:** Ability to work independently; identify appropriate resources required for a project, and manage a project through to complete.

### **Programme Specific Outcomes (PSOs)**

On the successful completion of the programme, students will be able to

PSOs Number	PSOs Statement
PSO1	Apply algorithmic principles, and computer science theory in the design of Computer-based systems.
PSO2	Apply higher degree of technical skills in problem solving and application development.
PSO3	Understand the concepts of relational database management which will include the aspects of database design, query languages and database system implementation.
PSO4	Show competence in various programming languages in the development of small to medium-sized application programs that demonstrate professionally acceptable coding and performance standard.

PS05	Ability to learn and use new development tools, software framework and
	middleware that aid in the development of software projects.
	Demonstrate mastery of Computer Science in the following core knowledge
	areas
P200	Data Structures , Databases
	Operating Systems, Software Engineering
	Computer Architecture, Computer Networks
PS07	Develop the Modern Web Applications using the Client and Server Side
	Technologies and the Web Design Fundamentals.
	Apply the knowledge of GUI and Database programming todevelop
PS08	effective software solutions needed for the government organizations and
	industrial areas.
PS09	Develop technical and managerial skills needed to be an effective leader as
	an entrepreneur or in a software concern.
PSO10	An understanding of professional, ethical, legal, security and social issues
	and responsibilities.

# Course Structure for B.Sc. Computer Science Programme - 2022 - 2023

Part	Category	No. of Courses	Total Credits	Marks
Ι	Tamil	4	12	400
II	English + Communicative English	4	12	400
III	Core Course (CC)	10	48	1000
III	Core Practical (CP)	6	18	600
III	Allied Course (AC)	4	16	400
III	Allied Practical (AP)	2	6	200
III	Major Based Elective Course(MBEC)	3	12	300
III	Project Work	1	4	100
IV	Skill Enhancement Course(SEC)	4	8	400
IV	Non-Major Elective Course(NMEC)	2	4	200
IV	Ability Enhancement Compulsory Course(AECC)	2	4	200
IV	Ability Enhancement Elective Course(AEEC)	1	2	100
IV	Professional English (Mandatory)	2	4	100
V	Extension Activity (Elective)	1	2	100
	TOTAL	46	152	4500

No. of New Courses Introduced	:	8
No. of Courses Modified	:	2
Percentage of Courses as per TANSCHE Norms	:	90 %

#### Head of the Department

Principal

# GOVERNMENT ARTS COLLEGE(AUTONOMOUS), SALEM-7 **B.Sc. Computer Science**

### For the candidates admitted from the Academic Year 2022-2023

s t	Course		ß	its	M	arks				
No	Par	code	Course Name	Hou	Cred	IA	SE	Max		
<u>SEMESTER - I</u>										
1	Ι	22FTL01	Foundation Tamil - I	5	3	25	75	100		
2	II	22FEL01	Communicative English-I	5	3	25	75	100		
3	III	22UCS01	Core Course I : Computer Fundamentals and Python Programming	5	5	25	75	100		
4	III	22UCSP1	Core Practical - I: Python Programming	3	3	40	60	100		
5	III	22AMT01	Allied – I : Course I :Allied Mathematics–I	5	4	25	75	100		
6	III	22AMTP1	Allied – I : Practical : Allied Mathematics	3						
7	IV	22AECC1	AECC –I: Value Based Education	2	2	25	75	100		
8	IV	22UPE01	Professional English-I	50		50				
			TOTAL	30	22			650		
			SEMESTER - II							
1	Ι	22FTL02	Foundation Tamil - II	5	3	25	75	100		
2	II	22FEL02	Communicative English-II	5	3	25	75	100		
3	III	22UCS02	Core Course II : Programming in C	5	5	25	75	100		
4	III	22UCSP2	Core Practical- II: C Programming	3	3	40	60	100		
5	III	22AMT02	Allied – I : Course II : Allied Mathematics–II	5	4	25	75	100		
6	III	22AMTP1	Allied – I : Practical : Allied Mathematics	3	3	40	60	100		
7	IV	22AECC2	AECC-II: Environmental Studies	2	2	25	75	100		
8	IV	22UPE02	Professional English-II	2	2	50		50		
			TOTAL	30	25			750		
			CUM-TOTAL		47			1400		

S.	rt	Course		ILS	lits	Ma	rks		
No	Pai	code	Course Name	Hou	Cred	IA	SE	Max	
			<u>SEMESTER – III</u>						
1	Ι	22FTL03	Foundation Tamil - III	5	3	25	75	100	
2	II	22FEL03	Foundation English – I:	5	3	25	75	100	
3	III	22UCS03	Core Course III : Data Structures and Algorithms	5	5	25	75	100	
4	III	22UCSP3	Core Practical III: Data Structures using C	3	3	40	60	100	
5	III	22ASTM1	Allied – II: Course I: Mathematical Statistics -I	5	4	25	75	100	
6	III	22ASTP1	Allied – II : Practical : Mathematical Statistics	3				-	
7	IV	22UCSS1	Skill Enhancement Course I: Career Prospects	2	2	40	60	100	
8	IV	22UCSN1	Non-Major Elective Course I: Web Design: Basics	2	2	25	75	100	
		22EXAT1	Extension(Community Service) : National Cadet Corps						
	v	17	22EXAT2	Extension(Community Service) : National Social Service	(tudy)	2		100	100
9		22EXAT3	Extension(Community Awareness): Indian Heritage and Culture	(Self S	2		100	100	
		22 EXAT4	Extension(Community Awareness) : Public Health and Personal Hygiene						
			TOTAL	30	24			800	
CUM-TOTAL 71 22									
<u>SEMESTER – IV</u>									
1	т	221771.04	<u>SEMESTER – IV</u>		2	25	75	100	
1	I	22FTL04	<u>SEMESTER – IV</u> Foundation Tamil – IV	5	3	25	75	100	
1 2 3	I II	22FTL04 22FEL04 22UCS04	<u>SEMESTER – IV</u> Foundation Tamil – IV Foundation English – II	555	3 3 5	25 25 25	75 75 75	100 100	
$\begin{array}{c} 1 \\ 2 \\ 3 \\ 4 \end{array}$	I II III	22FTL04 22FEL04 22UCS04 22UCSP4	<u>SEMESTER – IV</u> Foundation Tamil – IV Foundation English – II Core Course – IV: Web Technology	5 5 5 3	3 3 5 3	25 25 25 40	75 75 75 60	100 100 100	
$ \begin{array}{c} 1\\ 2\\ 3\\ 4\\ 5 \end{array} $	I II III III	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: MathematicalStatistical II	5 5 5 3 5	3 3 5 3 4	25 25 25 40 25	75 75 75 60 75	100 100 100 100 100	
1 2 3 4 5	I II III III III	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: MathematicalStatistics -IIAllied – II: Practical : Mathematical	5 5 3 5 3	3 3 5 3 4	25 25 25 40 25 40	75 75 75 60 75 60	100 100 100 100 100	
1 2 3 4 5 6 7	I II III III III IV	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP 22UCSS2	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: MathematicalStatistics -IIAllied – II: Practical : Mathematical StatisticsSkill Enhancement Course II:Image Editing Tech	5 5 3 5 3 2	3 3 5 3 4 3 2	25 25 25 40 25 40 40	75 75 60 75 60 60	100 100 100 100 100 100 100	
1 2 3 4 5 6 7 8	I II III III III IV IV	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP 22UCSS2 22UCSN2	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: MathematicalStatistics -IIAllied – II: Practical : Mathematical StatisticsSkill Enhancement Course II:Image Editing ToolNon-Major Elective Course - II :Web Design: A dyapced	5 5 3 5 3 2 2	3 3 5 3 4 3 2 2	25 25 25 40 25 40 40 25	75 75 75 60 75 60 60 75	100 100 100 100 100 100 100 100	
1 2 3 4 5 6 7 8	I III III III IV IV	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP 22UCSS2 22UCSN2 22AEEC1	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: Mathematical Statistics -IIAllied – II: Course II: Mathematical Statistics -IIAllied – II: Practical : Mathematical StatisticsSkill Enhancement Course II: Image Editing ToolNon-Major Elective Course - II : Web Design: AdvancedAbility Enhancement Elective Course I : Course I :	5 5 3 5 3 2 2 2	3 3 5 3 4 3 2 2	25 25 25 40 25 40 40 25 25	75 75 60 75 60 60 60 75	100 100 100 100 100 100 100 100	
1 2 3 4 5 6 7 8	I III III III IV IV	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP 22UCSS2 22UCSN2 22AEEC1	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: Mathematical Statistics -IIAllied – II: Course II: Mathematical Statistics -IIAllied – II: Practical : Mathematical StatisticsSkill Enhancement Course II: Image Editing ToolNon-Major Elective Course - II : Web Design: AdvancedAbility Enhancement Elective Course I : Gandhian Thoughts	5 5 3 5 3 2 2	3 3 5 3 4 3 2 2	25 25 25 40 25 40 40 25	75 75 60 75 60 60 75	100 100 100 100 100 100 100 100	
1 2 3 4 5 6 7 8 9	I II III III IV IV IV	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP 22UCSS2 22UCSN2 22UCSN2 22AEEC1 22AEEC2	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: Mathematical Statistics -IIAllied – II: Course II: Mathematical StatisticsSkill Enhancement Course II: Image Editing ToolNon-Major Elective Course - II : Web Design: AdvancedAbility Enhancement Elective Course I : Gandhian ThoughtsAbility Enhancement Elective Course II : Human Rights	5 5 3 5 3 2 2 2 (hpmts)	3 3 5 3 4 3 2 2 2	25 25 25 40 25 40 40 25	75 75 60 75 60 60 75 75 100	100 100 100 100 100 100 100 100	
1 2 3 4 5 6 7 8 8	I III III III IV IV	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP 22UCSS2 22UCSN2 22AEEC1 22AEEC1 22AEEC2 22AEEC3	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: Mathematical Statistics -IIAllied – II: Course II: Mathematical StatisticsSkill Enhancement Course II: Image Editing ToolNon-Major Elective Course - II : Web Design: AdvancedAbility Enhancement Elective Course I : Gandhian ThoughtsAbility Enhancement Elective Course II : Human RightsAbility Enhancement Elective Course II : Business Startup Fundamentals	5 5 3 5 3 2 2 2	3 3 5 3 4 3 2 2 2	25 25 25 40 25 40 40 25	75         75         75         60         60         60         75         60         100	100 100 100 100 100 100 100 100	
1 2 3 4 5 6 7 8 9	I II III III IV IV IV	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP 22UCSS2 22UCSN2 22UCSN2 22AEEC1 22AEEC2 22AEEC2 22AEEC3 22AEEC4	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: Mathematical Statistics -IIAllied – II: Practical : Mathematical StatisticsSkill Enhancement Course II: Image Editing ToolNon-Major Elective Course - II : Web Design: AdvancedAbility Enhancement Elective Course I : Gandhian ThoughtsAbility Enhancement Elective Course II : Human RightsAbility Enhancement Elective Course II : Business Startup FundamentalsAbility Enhancement Elective Course IV : Professional Ethics & Cyber Netiquette	5 5 3 5 3 2 2 2	3 3 5 3 4 3 2 2 2	25 25 40 25 40 40 25 	75 75 60 75 60 60 75 100	100 100 100 100 100 100 100 100	
1 2 3 4 5 6 7 8 8	I III III III IV IV	22FTL04 22FEL04 22UCS04 22UCSP4 22ASTM2 22ASTMP 22UCSS2 22UCSN2 22AEEC1 22AEEC1 22AEEC2 22AEEC3 22AEEC4	SEMESTER – IVFoundation Tamil – IVFoundation English – IICore Course – IV: Web TechnologyCore Practical –IV: Web Technology LabAllied – II: Course II: MathematicalStatistics -IIAllied – II: Practical : Mathematical StatisticsSkill Enhancement Course II:Image Editing ToolNon-Major Elective Course - II :Web Design: AdvancedAbility Enhancement Elective Course I :Gandhian ThoughtsAbility Enhancement Elective Course II :Human RightsAbility Enhancement Elective Course III :Business Startup FundamentalsAbility Enhancement Elective Course IV :Professional Ethics & Cyber NetiquetteTOTAL	5 5 3 5 3 2 2 2 30 30	3 3 5 3 4 3 2 2 2 2 2 2 2 2	25 25 25 40 25 40 40 25 	75 75 60 75 60 60 75 100	100 100 100 100 100 100 100 100 100 100	

S ± Course		Course			its	Ma	rks	
S. No	Par	code	Course Name	Hou	Cred	IA	SE	Max
1	III	22UCS05	Core Course V : Computer Organization & Architecture	5	4	25	75	100
2	III	22UCS06	Core Course VI : Visual Programming	5	5	25	75	100
3	III	22UCS07	Core Course VII : Relational Database Management Systems	5	5	25	75	100
4	22UCSM1 Major Based Elective I : Software Engineering			5	Д	25	75	100
т	111	22UCSM2	Major Based Elective II : Open Source Technology	5	т	25	75	100
F	TT	22UCSM3	Major Based Elective III : Multimedia Systems	F	Λ	25	75	100
C	5 III 22UCSM4		Major Based Elective IV : Computer Graphics	5	4	25	75	100
6	III	22UCSP5	Core Practical – V : RDBMS and Visual Programming	60	100			
7	IV	22UCSS3	Skill Enhancement Course III : Graphic Design	2	2	40	60	100
			TOTAL	30	27			700
			CUM-TOTAL		125			3800
			<u>SEMESTER - VI</u>					
1	III	22UCS08	Core Course VIII : Operating Systems	5	4	25	75	100
2	III	22UCS09	Core Course IX : Programming in Java	5	5	25	75	100
3	III	22UCS10	Core Course X: Computer Networks	5	5	25	75	100
4	III	22UCSM5	Major Based Elective V : Information Security	F	Λ	25	75	100
4 III 22UCSM6		22UCSM6	Major Based Elective VI : E-Commerce	5	4	25	75	100
5	III	22UCSP6	Core Practical – VI : Java Programming334060					100
6	III	22UCSPR	Comprehensive Project	5	4	50	50	100
7	IV	22UCSS4	Skill Enhancement Course IV : Android Programming	2	2	40	60	100
			TOTAL	30	27			700
		Gran	d Total of Credits and Marks		152			4500

			SEMESTER - I				
Course	Code	22UCS01	COMPUTER FUNDAMENTALS AND PYTHON PROGRAMMING	L	Т	Р	C
Core/El	ective/Su	upportive	CORE COURSE - I	5	0	0	5
Pre-req	uisite		Usage and operations of Computer	Acac 2(	1emi )22-2	c Y 023	ear S
Course	Objectiv	/es:					
• To	built an	extensive kn	owledge on the basic applications and the comp	onent	ts of		
• To	bring th	e ability to w	rite, test and debug python programs.				
• To	train an	d develop cor	ntrol structures in python programs.				
• To pr	inculcat ograms.	te the exercis	se of compound data using lists, tuples and str	ings	in py	/thc	on
• To	get fami	iliarize in read	d and write data from and to files in python prog	cams.			
Expecte	d Course	e Outcomes:					
On the s	uccossfu	l completion	of the course student will be able to:				
on the s	Tound	aretand the a	or the course, student will be able to.	tain			
C01	the basi	ic application	s of computers and to interpret the program des	sign	K1/ K4	Κ2,	/
	To perc	eive variable	s identifiers data types operators and expressi	ons			
CO2	and to 1	memorize res	served words and indentation and to apply skill	s in	K1/K2/		/
002	writing	the first pyth	on program and evaluate the results obtained.	<u> </u>	K3/	′K4	
CO3	To observe	erve and emp ments of pass	ploy control structures in python and to learn ing parameters to functions.	the	K1/ K3	Κ2,	/
CO4	To mak	e clear the con functions in p	ncepts of strings, lists and tuples and to execute the vthon programs.	neir	К1/ КЗ	′K2,	/
	To awa	re about the	operations of set and dictionaries and to assess	the	KS		
CO5	operati	ons impleme	nted. To analyse the files operations executed ir	1	K2/ K5	Κ4,	/
	python	programs.					
K1 -	Rememb	ber; <b>K2</b> - Unde	erstand; K3 - Apply; K4 - Analyze; K5 - Evaluate;	K6 –	Crea	te	
Unit : I			Introduction to Computers	1	2 ho	urs	
Introduc	tion to C	computers: Cl	haracteristics of Computers-Classification of Co	mput	ters ·	Bas	sic
Applicati	ons of C	computers -	Components and Functions of a Computer Sy	stem	-Pro	ogra	m
Design T	ools: Algo	orithms, Flow	charts, Pseudo codes - Types of Errors - Testing	and I	Jebu	ggir	ıg
Approach	Bac	ice of Puthon	Programming / Operators and Expressions	1	2 ho	110	
Basics of	Das Duthon	Programmir	restures of Puthon Writing and Executiv		2  IIO	uis uth	on
Program	. Fyului Jiteral (	Constants - V	ariables and Identifiers - Data Types - print()	ig Fii innut	Πρ	ytin val	
function	-Comme	nts - Reserve	anables and identifiers Data Types print(),	sions	U, C • Tvr	001 005	0 of
Operator	s -Expres	ssions in Pyth	on - Operator Precedence and Associativity.	310113.	. ryp	103	01
Unit : III		Decisi	on Control Statements / Functions	1	2 ho	urs	
Decision	Control S	Statements: B	ranching Statements: if Statement - if-else State	nent	– Nes	sted	lif
Statemer	its – if-eli	if-else Statem	ent – Loop statement: while Loop – for loop - br	eak St	taten	ient	t –
continue	Stateme	ent - pass St	atement - else Statement used with Loops -	Nest	ed I	.00I	os.
Function	s: Syntax	and basics o	of a function - Parameters and Arguments in a f	uncti	on -	Loc	al
and Glob	and Global scope of a variable - return statement - Recursive Functions - Lambda Function.						

Unit	IV Python Strings / Lists / Tunles	12 hours								
Dythou	A Strings: Concetenating Appending and Multiplying Strings - String	g Formatting								
Operator Built in String Mothods and Eulerians. Slice Operation and and shr functions in										
and not in operators - Comparing Strings Lists: Accessing values in Lists - Undating Values										
in Lists Nosted Lists Cloning Lists Basic List Operations List Methods Tuples Creating										
Tunles-tunle() function - Inhuilt functions for Tunles- Indexing and Slicing										
Unit:	V Sets / Dictionaries / File Handling	12 hours								
Sets: C	Sets: Creating Sets - Set in and not in Operator - Python Set class - Set Operations - Dictionaries									
Creati	Creating Dictionary - Adding Replacing and Retrieving Values - Formatting Dictionaries File									
Handli	ng :File path – Types of Files – Opening and Closing Files- Reading and W	Vriting Files –								
File po	sitions – Renaming and Deleting Files – Directory Methods.									
	Total Lecture hours	60 hours								
Text B	ooks									
1	ReemaThareja, "Python Programming Using Problem Solving Approach", (	Oxford								
1	University Press, 2017.									
2	Ashok NamdevKamthane, Amit Ashok Kamthane, "Programming and Pro	blem Solving								
Z	with PYTHON", McGraw Hill Education (India) Private Limited, Chennai, 2	2018.								
Refere	ence Books									
1	Jeff McNeil, "Python 2.6 Text Processing: Beginners Guide", Packet Publicati	ions, 2010.								
2	S. A. Kulkarni, "Problem Solving and Python Programming", Yes Dee Pu	ublishing Pvt-								
2	Ltd, Chennai, 2017 (Anna University Regulation 2017).									
2	Allen B. Downey, "Think Python: How to Think Like a Computer Scientist"	', O'Reilly,								
3	1st Edition 2012.									
Web F	References									
1	https://india.oup.com/orcs/9780199480173									
2	http://www.pythonsoft.com									
3	http://www.python.org.									
4	http://www.edx.org.									
5	https://developers.google.com/edu/python/?hl=en.									
Assign	nments									
1	Control Structures									
2	String Functions									
3	Tuples and Dictionaries									
4	File Handling									
Course	e Designed By									
Dr. M.	Rajalakshmi									

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	S	Μ	L	S	L	Μ	L	Μ	L	Μ
CO2	Μ	S	L	S	Μ	L	L	Μ	Μ	L
CO3	S	S	L	Μ	Μ	L	L	L	Μ	Μ
CO4	Μ	S	L	S	Μ	S	Μ	L	Μ	Μ
CO5	Μ	S	Μ	Μ	Μ	S	L	Μ	S	Μ

S - Strong  $\,M\mathchar`-$  Medium  $\,L\mathchar`-$  Low

SEMESTER - I										
Course Co	ode	22UCSP1	PYTHON PROGRAMMING	L	Т	Р	C			
Core/Elect	tive/Su	pportive	CORE PRACTICAL - I	0 0 3						
Pre-requisiteKnowledge on PythonAcade 20										
Course Ol	ojectiv	es:								
<ul> <li>To but</li> <li>To st</li> <li>program</li> <li>To in</li> <li>program</li> <li>program</li> <li>To get</li> </ul>	<ul> <li>To built an extensive knowledge on operators in python programming.</li> <li>To strengthen the ability to conceive the concepts of control structure in python programming.</li> <li>To inculcate the exercise of compound data using lists, tuples and strings in python programming.</li> <li>To get familiarize in various operations of files in python programming.</li> </ul>									
Expected	Course	Outcomes:								
On the suc	cessfu	l completion o	of the course, student will be able to:							
C01	To ap evalu	ply arithmetic ate it perform	c operators in the python programming and ance.		K3,	/K4/I	٢5			
CO2	To im progr	plement the d amming.	ecision control statements in the python		K3,	/K4/I	٢5			
CO3	To explo	ecute the loop re it opportun	ıd	K3/K4/K5						
CO4	To im their i	plement the c inbuilt functio	oncepts of strings, lists and tuples and to exections in python programs.	ute	K3/K4/K5		٢5			
CO5	To ex	ecute and ana	lyze the files operations in python programs.		K3/K4/K5		٢5			
<b>K1</b> - R	emem	ber; <b>K2</b> - Und	erstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evalua	ite; K	6 – C	reate				
Practical	1		Types of operators		3	hour	S			
Create a si	mple c	alculator to d	o all the arithmetic operations.							
Practical	12		Decision Control Statements		3	hour	S			
Write a pr	ogram	to find wheth	ner a given year is a leap year or not.							
Practical	13		Loop Statements		3	hour	S			
Write a pr	ogram	using for loop	o to calculate the average of first n natural num	ıbers.						
Practical	l 4		Loop Statements		3	hour	'S			
Write a pr	ogram	to find the ma	atrix multiplication.							
Practical	l 5		Functions		3	hour	'S			
Write a pr	ogram	to compute t	he GCD of two numbers using functions.							
Practical	l 6		<b>Recursive Functions</b>		3	hour	S			
Write a pr	ogram	to find the fac	ctorial of a given number using recursive funct	tions.						
Practical	l 7		String Functions		3	hour	'S			
Write a py given strir	thon p 1g.	rogram to cou	unt all lower case, upper case, digits, and speci	al syn	nbol	s fron	1a			

Practical 8	List Operation	3 hours					
Write a program to find the maximum of a list of numbers.							
Practical 9	3 hours						
Write a python	Write a python program to convert a tuple to a string.						
Practical 10	File	3 hours					
Write a program that counts the number of tabs, spaces, and newline characters in a file.							
	Total Practical hours	30 hours					
Course Designed By							

Dr. M. Rajalakshmi

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	S	S	L	S	Μ	L	L	Μ	S	L
CO2	S	S	L	Μ	Μ	L	L	Μ	S	Μ
CO3	S	S	L	Μ	Μ	L	L	Μ	S	Μ
CO4	Μ	S	L	S	Μ	S	L	Μ	Μ	М
CO5	L	S	Μ	S	S	Μ	Μ	Μ	Μ	Μ

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}$  Medium  $\,$  L- Low

SEMESTER - II								
Course	Code	22UCS02	PROGRAMMING IN C	L	Т	Р	C	
Core/El	lective/Sı	apportive	CORE COURSE - II	5	0	0	5	
Pre-req	uisite		Knowledge on computing fundamentals	A	aden 2022	nic Ye 2-2023	ear	
Course	Objectiv	ves:						
• T so • T • T • T • T • T • R Expecte On the s	<ul> <li>solving techniques.</li> <li>To enhance the analyzing and problem solving skills and use the same for writing programs in C.</li> <li>To develop an in-depth understanding of functional and logical concepts of C Programming.</li> <li>To provide exposure to problem-solving through C programming.</li> <li>To familiarize the basic syntax and semantics of C Language.</li> <li>Recollect various programming constructs and to develop C programs.</li> </ul> Expected Course Outcomes: On the successful completion of the course, student will be able to: Understand the fundamentals of C programming. Choose the right data representation formats based on the requirements of the problem. Apply CO1 the specification of syntax rules for numerical constants and variables K2/K3							
C01	the specification of syntax rules for numerical constants and variables K2/K3 similarly other data types. Ability to work with textual information, characters and strings. Design and develop C program to evaluate simple expressions and logical operations. Illustrate the control statements to write basic C programs.Use the comparisons and limitations of the various K2/K3/K4 programming constructs and choose the right one for the task in hand.							
CO3	Improve the ability to use conditional statements and loops structures.Ability to work with arrays of complex objects.Develop & Implement Cprograms with suitable modules to solve the given problem. Implementdifferent Operations on arrays, functions and pointers.Identify the usageof arrays, strings, functions and pointers. Improve the ability to developK2/K3/K4function-oriented programs. Along with understanding of the distinctionfor passing arguments to/from functions.Modularize the code with							
CO4	Implem the feat importa underst ability t	ent different cures of struc ince of poin anding of the o use the dyna	Operations on structures, unions and files. tures, union and their applications. Evalu ters with arrays and functions. Impro use of arrays and pointers also has impro amic memory.	Analyz ate tł ove m ove th	ze ne ny Kž e	2/K3,	/K4	
CO5	CO5Demonstrate the concept of pointer and perform I/O operations.CO5Develop C programs using file management concepts.Create, read and write to and from simple text and binary files.							
	- Kemem	iber; <b>K</b> 2 - Und	erstand; K3 - Apply; K4 - Analyze; K5 - Eval	uate;	NO - (	reate	;	
Introdu	it : I	 C - Constants	- Variables - Data types - Declaration of Vari	iahlos		12 no	ion of	
Storage Express Operate	Introduction to C – Constants - Variables - Data types- Declaration of Variables - Declaration of Storage Classes - Symbolic Constants - Overflow and Underflow of Data Operator and Expressions: Types of Operators - Evaluation of Expressions - Precedence of Arithmetic Operators – Type Conversions in Expressions - Operator Precedence and Associativity.							

Unit: Il	[	Branching and Looping	12 hours				
Managing I	nput	and Output Operations: Reading and Writing Character – Form	atted Input and				
OutputDee	cision	Making and Branching: Simple IF Statement-IF-ELSE Stateme	ent– Nested IF-				
ELSE State	ments	s – ELSE IF Ladder - ? : Operator – SWITCH Statement – GO	ΓΟ Statement –				
Decision M	aking	and Looping: WHILE Statement -DO Statement -FOR Statem	ent – Jumps in				
LOOPS- Sk	ipping	g a Part of LOOP – Nested LOOPS.					
Unit :II	Ι	Modularization of Programming	12 hours				
Arrays: De	clarat	ion and Initialization of Single dimensional - Two Dimensio	onal Arrays -				
Dynamic A	rrays.	- Declaring and Initializing String Variable - Reading and W	riting Sting to				
and from T	[ermi	nal - Arithmetic Operations on Characters -User-defined Funct	ions - Elements				
of User-def	tined	Functions - Return Values and their Types - Function calls an	d Declaration -				
Argument	or No	Argument with or without Return Values - Return Multiple V	alues - Nesting				
of Function	1S – K	ecursion-Passing Arrays and Strings to Functions - Scope, Visit	oility and				
	varia		10.1				
Unit: IV	V	Structures and Unions	12 hours				
Structures	and l	Jnions: Defining, Declaring, Accessing and Initializing Structure	e - Copying and				
Comparing - Arrays of Structure - Structure within Structures - Unions - Pointers: Accessing,							
Declaring, I	nitial	izing Pointers - Chain of Pointers -Pointer Increment and Scale F	actor - Pointers				
and Arrays	- Arra	ay of Pointers - Pointers as Function Arguments- Functions Return	rning Pointers -				
Pointer to F	Former to Functions - Formers and Structure - Troubles with Formers.       Unit: V       File Handling						
Unit: V	/	File Handling	12 hours				
File Manag	emen	t: Defining and Opening a File - Closing a File - Input / Output	Operations on				
Files - Ran	dom	Access to Files. Dynamic Memory Allocation: Allocating a bloc	k of Memory -				
Allocating	Multip	ble blocks of Memory - Releasing the Used Space - Altering the Si	ize of a Block. –				
Preprocess	or :Ma	acro Substitution - File Inclusion - Compiler Control Directives.	(0.1				
		Total Lecture hours	60 hours				
TEXT BOO	DKS						
	E.Bal	<i>lagurusamy</i> , "Programming in ANSI C", Tata McGraw-Hill, Fourth	i Edition.				
REFERENC	CE BC		1				
1	Reem	aThareja, "Programming in C", Oxford University Press, Second E	dition, 2018.				
2	Kemi	ghan, B.W and Ritchie, D.M, "The C Programming Language", Sec	ond Edition,				
_	Pear	son Education, 2006.					
3	Paul	Deitel and Harvey Deitel, "C How to Program", Seventh Edition, Pe	arson				
5	Publ	ication.					
WEB REFE	RENG	CES					
1	https	s://www.tutorialspoint.com/cprogramming/index.htm					
2	https	://www.programiz.com/c-programming					
3	https	s://www.learn-c.org/					
4	https	://www.javatpoint.com/c-programming-language-tutorial					
5	https	s://www.cprogramming.com/tutorial/c-tutorial.html					
ASSIGNM	ENTS	5					
1	Arra	У					
2	Struc	ctures and Unions					
3	3 Pointers						
Course Designed By							
Mr. V. Vinc	ent A	rokiam Arul Raja					

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	S	S	L	S	Μ	Μ	L	L	S	Μ
CO2	S	S	L	S	Μ	Μ	L	L	S	Μ
CO3	S	S	L	S	Μ	Μ	L	L	S	Μ
CO4	S	S	Μ	S	Μ	Μ	L	L	S	Μ
CO5	S	S	Μ	S	Μ	Μ	L	L	S	Μ

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}$  Medium  $\,$  L- Low

		SEMESTER - II						
Course Code	22UCSP2	C PROGRAMMING	L	Т	Р	С		
Core/Elective/S	upportive	CORE PRACTICAL - II	0	0	3	3		
Pro-roquisito		Ability to develop algorithms for given	Acad	lemi	c Yea	r		
1 ie-iequisite		problems		2022	-2023			
Course Objecti	ves:							
Ability to	develop simp	le C programs.						
Represent	t and manipul	ate data with arrays, strings and structures.						
Use point	ers of differen	t types.						
Create, re	Create, read and write to and from simple text and binary files.							
Modulariz	ze the code wi	th functions so that they can be reused.						
Correct sy	ntax errors as	s reported by the compilers.						
Identify as	nd correct log	ical errors encountered during execution.						
Write the	program on a	computer, edit, compile, debug, correct, reco	ompil	e and	d run i	it.		
To write diversified solutions using C language.								
Expected Cours	se Outcomes:							
On the successful completion of the course, student will be able to:								
CO1 Unde defin	CO1 Understanding C construct with various data types declaration and K2/K3/K4/ defining. K5							
CO2 Unde	rstand and ap	ply the various operators in simple calculation	ons.	K2/	′K3/4	/K5		
CO3 Analy	ze and evalu ience the flov	ate the conditional and loop statements and v of the C programming.	1	K2/ K5	′K3/K	4/		
CO4 Unde using	rstand and an C functions.	alyze the modular approach of the programs		K2/ K5	′K3/K	4/		
CO5 Store	and retrieve	data of any type using C file handling.		K2/ K5	′K3/K	4/		
K1 - Remem	ber; <b>K2</b> - Und	erstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evalu	ate; I	K6 - (	Create	ć		
Practical 1	L Va	arious Data Types Declaration and Defining	5	3	hour	s		
1.Write a C prog	gram to print	your name, date of birth, mobile number and	l vers	ion o	of C.			
Practical 2,3	&4	Simple Calculation		6	hour	s		
2.Write a C prog	gram to conve	rt specified days into years, weeks and days.						
3.Write a C prog	gram to gener	ate a random number.						
4.Write a C program that takes hours and minutes as input, and calculates the total number								
Dra ati sal 5	(				1	_		
Fractical 5,	o ram to accor	Conditional Statement	mari	7 Habb	nour	5 No in		
which quadrant the coordinate point lies.								
6. Write a C prog	6. Write a C program to check whether a triangle is Equilateral, Isosceles or Scalene.							

Practical 7,8,9 & 10	Practical 7,8,9 & 10Array and Function8 hours						
7.Write a program in frequency of occurr	C to count a total number of duplicate elements in an arra ence.	y and					
8. Write a program in C to find the sum of the series 1!/1+2!/2+3!/3+4!/4+5!/5 using the function.							
9.Write a program in C to find the Hailstone Sequence of a given number upto 1 using							
recursive function.							
10.Write a program i	n C to count a number of lines, number of words and charac	cters in a file.					
Practical 11 & 12	File Handling	6 hours					
11. Write a program ir	n C to encrypt a text file and decrypt it.						
12. Write a program in C to replace a specific line with another text in a file.							
	Total Practical hours 30 hours						

Course Designed By

Mr. V. Vincent Arockiam Arul Raja

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

COs/PS Os	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	S	Μ	L	S	S	Μ	L	L	Μ	L
CO2	S	Μ	L	S	S	Μ	L	L	Μ	L
CO3	S	Μ	L	S	S	Μ	L	L	Μ	L
CO4	S	Μ	L	S	S	Μ	L	L	Μ	L
CO5	S	Μ	L	S	S	Μ	L	L	Μ	L

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}$  Medium  $\,$  L- Low

			SEMESTER - III				
Course	Code	22UCS03	DATA STRUCTURES AND ALGORITHMS	L	Т	Р	C
Core/Ele	ective/	'Supportive	CORE COURSE - III	5	0	0	5
Pre-requ	isite		Knowledge on Data Structures	Aca	adem 2022∙	ic Y -202	ear 3
Course (	Object	ives:					
• To	create	e a wide knov	wledge on algorithms and data structures.				
• To	build	the ability to	handle linked list.				
• To	train	and develop	the application of trees.				
• To	inculo	cate the exer	cise of graphs and hash tables.				
• To	get fa	miliarize in s	orting and searching algorithms.				
Expected	l Cou	rse Outcome	s:				
On the si	iccess	ful completio	on of the course, student will be able to:				
	Тош	nderstand ar	nd explore the usage of algorithms and to retain				
C01	the n	orms of arrastructures.	ays, stacks and queue and to interpret with the	K1 K4	/K2,	/K3,	/
	То ре	erceive the a	pplication of linked list and to remember its types	К1	K1/K2/K3/		/
CO2	and t	o apply skill	s in insertion and deletion of operation and	K4			
	evalu	ate the result	ts obtained.				
CO3	applications. K1/K2/K3						
CO4	To m its re	ake clear the quirements v	e concepts of graphs and hash tables and to learn vhile portraying data.	K1	/K2	/K3	
	To av	ware about (	the searching and sorting data and to assess its				
C05	funct	ions.		K2	2/K3	/K4	
I/A F	Toan	alyze type of	file organization in the data structures.	Tre	0		
KI - F	temen	iber; <b>K2 -</b> Un	Iderstand; K3 - Apply; K4 - Analyze; K5 - Evaluate;	K6	-Cre		
Unit:	1 tion o	folgorithma	Introduction of Algorithms	A 1997	12	nou	rs
Matrices	Sta	raigoriumis,	, analyzing algorithms, Arrays: Representation of A	1117 120	iys, s Recu	rsio	se n
Evaluati	on of	Expression -	Infix to postfix Conversion. <b>Oueue:</b> Definition –	<b>к.</b> Оре	eratio	ns (	of
Queues-	Vario	us Queue Str	uctures - Application of Queues.	ope			01
Unit:	II		Linked List		12	hou	rs
Linked	List:	Comparison	of sequential and linked representation -Singly	' Li	nkea	l lis	st:
insertion	and o	deletion oper	ation. Application of Singly Linked List: Polynon	nial	addi	tion	-
Linked st	acks a	and queues –	Double Linked List: insertion and deletion operati	on.	1		
Unit:	III		Binary Trees		12	hou	rs
Trees: I	Definit	ion and Bas	ic terminologies - <b>Binary trees:</b> Definition and	d c	comp	ariso	on
between tree and binary tree - Binary tree representations – <b>Binary Tree traversal:</b> Inorder,							er,
Conversion of a Forest Tree to Binary Tree – Binary tree for arithmetic expressions							-
Unit	IV		Graphs and Hash Tables	.0113	12	hou	rs
<b>Graphs:</b> Terminologies – Representation of Graphs: Adjacency and path matrix – <b>Graph</b>							h
<b>Traversals:</b> Breadth First Search, Depth First Search - Spanning trees and Minimum cost							
spanning	<u>trees</u>	- Shortest pa	th algorithm. Hash tables: Hashing functions.		<u>.</u>		

Unit: V	Searching / Sorting / File Organizations	12 hours
Searching:	Linear Search - Binary Search - Comparison of Linear & Binary Search.	Sorting:
Insertion -	Radix - Quick - Heap - Merge. File organizations: Sequential Organ	nizations,
Random Org	ganization and Linked Organization.	(0.1
TEVT BOOI	I otal Lecture hours	60 hours
TEXT DOOL	Filis Horozoitz SartaiSahni "Fundamentals of Data Structures" Galgoti	
1	publications, Ninth printing.	la
REFERENC	E BOOKS	
1	<i>Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman</i> , "Data stru Algorithms", Pearson Education Pvt. Ltd., 1 <sup>st</sup> edition.	icture and
2	Seymour Lipschutz, "Data Structures" Tata Mcgraw Hill, Schaum's Series (Revised First Edition), February 2014.	s Outline
3	DebasisSamanta"Classic Data Structures", PHI, Second Edition.	
WEB REFER	RENCES	
1	https://nptel.ac.in/courses/106/102/106102064/	
2	http://nptel.ac.in/courses/106106133/	
3	https://swayam.gov.in/explorer?searchText=data%20structures	
4	https://www.tutorialspoint.com/data_structures_algorithms/	
5	http://www.careerride.com/test.aspx?type=Data-structure	
(	https://www.tutorialspoint.com/data_structures_algorithms/data_	
0	structures_algorithms_online_test.htm	
7	http://www.withoutbook.com/OnlineTest.php	
8	http://www.sitesbay.com/data-structure/index	
ASSIGNM	ENTS	
1	Array representations and operations	
2	Applications of Stack and Queue	
3	Applications of Linked List	
4	Binary tree traversal algorithms	
5	Graph traversal algorithms	
6	Spanning trees and Minimum cost spanning trees	
7	Shortest path algorithm	
8	Algorithms for Quick and Heap sorting	
Course Desi	igned By	
Mr. R. Venka	atachalam	

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	S	S	Μ	Μ	Μ	S	L	L	Μ	Μ
CO2	S	S	L	Μ	L	S	L	Μ	Μ	Μ
CO3	S	Μ	L	Μ	Μ	S	Μ	Μ	L	L
CO4	S	S	L	S	Μ	S	L	S	Μ	L
CO5	S	Μ	Μ	S	Μ	S	Μ	Μ	Μ	L

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}\, \text{Medium}\,$   $\,{\bf L}\text{-}\, \text{Low}\,$ 

SEMESTER - III									
Course	Code	22UCSP3	DATA STRUCTURES USING C	L	Т	Р	С		
Core/E	lective/	Supportive	CORE PRACTICAL - III	0	0	3	3		
Pre-req	uisite		Knowledge on Data Structures	Ac	adem 2022·	ic Ye •2023	ar		
Course	Object	tives:							
•	<ul> <li>To built an extensive knowledge on algorithms and data structures using C programs.</li> <li>To strengthen the ability to handle linked list and double linked list in C programming.</li> </ul>								
•	Γo incu	lcate the exer	cise of binary tree traversals in C programmin	ng.					
•	Го get f	amiliarize in	searching and sorting algorithms using C pro	gram	s.				
Expecte	ed Cou	rse Outcomes	:						
On the successful completion of the course, student will be able to:									
CO1	To app perfor	To apply the array operations in C programming and evaluate it K3/K4/K5 berformance.							
C02	To im	implement the queue operations in C programming. K3/K4/K5							
CO3	To exe it opp	ecute the linko ortunities.	ed list operations in C programming and expl	ore	K3/1	K4/K	5		
CO4	To impoperate	plement the co tions in C pro	oncepts of binary trees and to execute their grams.		K3/1	K4/K	5		
CO5	To exe progra	ecute and ana ams.	lyze searching and sorting algorithms using (	Ĵ	K3/1	K4/K	.5		
K1 -	Remen	nber; <b>K2 -</b> Un	derstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Eval	uate;	K6 -	Creat	e		
Practi	cal 1		Arrays		3	hour	S		
Write a them in	C prog third l	ram to create ist.	two array list of integers. Sort and store the	elem	ents o	f botł	h of		
Practi	cal 2		Arrays		3	hour	s		
Write a using a	ı C prog rrays.	gram to mult	iply two matrices A and B and store the re-	sultai	nt ma	trix i	n C		
Practi	Practical 3 Operations of Stack using Arrays					hour	S		
Write a	C prog	gram to imple	ment the operation of STACK using array.						
Practi	cal 4		Queue		3 hours				
Write a followi	Write a C program to create menu driven options to implement QUEUE to perform the following (i) Insertion (ii) Deletion (iii) Modification (iv) Listing of elements								

Practical 5	Single Linked List	3 hours						
Write a C prog	ram to create Linked list representations of employee records and	do the						
following oper	ations using pointers.							
(i)	To add a new record.							
(ii)	To delete an existing record.							
(iii)	To print the details about an employee.							
(iv)	(iv) To find the number of employees in the structure.							
Practical 6	Double Linked List	3 hours						
Write a C program to insert an element at the different positions of a doubly linked list.								
Practical 7	Binary Tree Traversal	3 hours						
Write a C program to traverse the given binary tree using all traversal methods (recursive).								
Practical 8		3 hours						
Write a C prog recursive).	gram to traverse the given binary tree using all traversal methods	s (non						
Practical 9	Searching Algorithm	3 hours						
Write a C prog	gram to demonstrate Binary Search.							
Practical 10	Sorting Algorithm	3 hours						
Write a C prog	gram to arrange a set of numbers in ascending order using QUIC	K SORT.						
	Total Practical hours	30 hours						
Course Desig	Course Designed By							
Mr. R. Venkat	achalam							

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	S	S	L	S	Μ	S	L	Μ	S	L
CO2	S	S	L	Μ	Μ	S	L	Μ	S	Μ
CO3	S	S	L	Μ	Μ	S	L	Μ	S	Μ
CO4	Μ	S	L	S	Μ	S	L	Μ	Μ	Μ
CO5	S	S	Μ	S	S	S	Μ	Μ	Μ	Μ

S - Strong M- Medium L- Low

		SEMESTER - III								
Course Code	22UCSS1	CAREER PROSPECTS	L	Т	Р	С				
Core/Elective/S	Supportive	SKILL ENHANCEMENT COURSE - I	0	0	2	2				
Pre-requisite		Knowledge on Mathematics , English and Programming Languages	A	ade: 2022	mic ¥ 2-2023	éar 3				
Course Object	ives:									
To deve	elop skills to v	vrite various types of Examinations for Placer	nents	;						
To delive	ver skills that	support the organization's strategic goals.								
Expected Cour	se Outcomes									
On the success	ful completio	n of the course, student will be able to:		-						
C01	Understand reasoning to national leve	the value of mathematics and verbal/non ver acquire the skills for appearing examinations.	bal ons	К	(1 / K)	2/K3				
CO2	Familiar with learning the and mange i	th the various programming skills by the programming languages to develop quality t.	way y S/	of W K	(4/K	5/K6				
CO3	Learn variou corporate ar	s skills associated with the interviews to face ad government sectors for placements		K	K3/K4					
CO4	Enhance the	Leadership skills and Communication skills		K	K2/K3					
CO5 Enhance the Problem Solving Skills K3/K										
K1 - Remem	ıber; <b>K2 -</b> Uno	lerstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evalu	iate;	K6 -	Creat	te				
Practical 1		Quantitative Aptitude			4 hou	ırs				
1. Conduct On the topics gi	line/Offline A ven below: 1	ptitude Test using Objective Type Questions Arithmetic ability 2.Verbal Reasoning 3.Non	-501 verb	los./ al Re	'hour eason	for ing				
Practical 2		Technical Skills			4 hou	ırs				
2. Conduct On for various	line/Offline T programming	echnical Skill Test using Objective Type Ques languages	stions	501	los./l	hour				
Practical 3		Interview Skills			4 ho	urs				
3. Different triinterviews;	ypes of inter Body Langua	rviews: Answering questions and offering ge; Articulation of sounds; Intonation.	infor	mati	ion;	Mock				
Practical 4		Group Discussion			4 ho	urs				
4. Team Manag	gement , Deba	ates and Solution discovery								
Practical 5		Role Play			4 ho	urs				
5. Scenario , Ta	asks and Proc	ess								
	Total Practical hours 20 hours									
Course Design	ed By									
Dr.R.Pugazenc	li									

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	Μ	L	L	L	L	L	L	L	L	L
CO2	М	S	Μ	S	L	Μ	L	L	S	L
CO3	L	S	Μ	S	L	Μ	L	L	S	L
CO4	L	Μ	L	Μ	Μ	L	L	L	S	Μ
C05	L	L	L	Μ	Μ	L	L	L	S	М

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}$  Medium  $\,$  L- Low

			SEMESTER - III							
Course	Code	22UCSN1	WEB DESIGN : BASICS	L	Т	Р	С			
Core/Ele	ective	/Supportive	NON- MAJOR ELECTIVE COURSE - I	2	0	0	2			
Pre-requ	iisite		Knowledge on Computer Hardware & Software	Ac	ademi 2022	c Yea -2023	r			
Course 0	Objec	tives:								
• To	prov	ide basic idea	on web design.							
• To	prov	ide insight on	various elements of HTML.							
• To	acqu	ire knowledg	e about HTML Comments and Links.							
• To	learn	the insertion	of Ordered & Unordered lists within a Web Pag	ge.						
Expected	d Cou	rse Outcome	5:							
On the s	ucces	sful completio	on of the course, student will be able to:							
C01	Ur	nderstand the	concept of HTML Tags.		K1/I	ζ2				
CO2	Ap	ply Formatti	ng Tag in HTML Scripts.		K2/I	ζ3				
CO3	Un	derstand and	Apply Various Image Tag in HTML Scripts.		K2/I	ζ3				
CO4	CO4 Analyze the Hyperlinks in HTML Scripts.									
C05	\$S	K4/K6								
K1 -	K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create									
Unit: I HTML Overview&Tags 5 hours										
Basic HTML Document - HTML Tags - HTML Document Structure - The Declaration - Heading Tags - Paragraph Tag - Line Break Tag - Centering Content - Horizontal Lines - Preserve Formatting - Non breaking Spaces										
Unit:	II		HTML Elements & Text		5 1	nours				
HTML Ele	ement	s - HTML Form	atting - Bold Text - Italic Text - Underlined Text - Strik	e Te	ext – Mo	nospa	iced			
Font - Su	perscri xt	pt Text - Subsc	ript Text - Larger Text - Smaller Text - Emphasized Te	xt -	Marke	d Text	-			
Unit:	III		HTML Comments & Image		5 1	nours				
HTML Co	mmen	ts - Valid Vs In	valid Comments - Multiline Comments - HTML Imag	ges	- Inser	t Imag	je -			
Set Image	Locati	on - SetImage	Width/Height - Set Image Border - Set Image Alignme	ent.						
Unit:	IV		HTML Links		5 l	nours				
HTML Te	ext Linl	ks - Hyperlinks	- Linking Documents - The target Attribute - Setting	Link	Colors	HTMI	<b>.</b> د			
Unit:	V		HTML Lists		5 ł	nours				
HTML Lis The type	sts - H Attribu	HTML Unordered	ed Lists - The type Attribute for Unordered Lists - H' Lists - The start Attribute HTML Definition Lists.	ΓML	2 Order	ed List	:S -			
			Total Lecture Ho	urs	25	hours	3			
TEXT B	OOK	5								
1	https	://www.tuto	rialspoint.com/html							
REFERE	INCE	BOOKS								
1	C.Xa	vier, "World w	vide web design with HTML", Tata McGraw Hill	, 2 <sup>n</sup>	<sup>d</sup> Repr	int 20	00.			
2	Andy	Holyer, "HTM	1L in easy steps", Dream Tech Press, 2001.							
WEB RE	FERE	ENCES								
1	https	://www.w3s	chools.com/html/							
2	https://www.w3.org/standards/webdesign/htmlcss									

ASSIG	NMENTS
	Create an HTML document which consists of:
1	I. Ordered List II. Unordered List III. Nested List IV. Image
2	Create an HTML document which implements Internal linking as well as external
Z	linking.
3	Create an HTML document with the following formatting options:
	I. Bold
	II. Italics
	III. Underline
	IV. Headings (Using H1 to H6 heading styles)
	V. Font (Type, Size and Color)
	VI. Background (Colored background/Image in background)
	VII. Paragraph
	VIII. Line Break
	IX. Horizontal Rule
	X. Pre tag
Case St	udy
1	Website Design and Development Using HTML
Course	Designed By
Dr. M.M	Ialathi

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	L	L	L	L	L	L	S	L	L	L
CO2	Μ	Μ	Μ	Μ	Μ	L	S	L	Μ	L
CO3	L	Μ	L	L	Μ	L	S	Μ	Μ	L
CO4	Μ	Μ	Μ	Μ	S	L	S	Μ	Μ	L
CO5	Μ	S	Μ	S	S	L	S	Μ	S	L

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}$  Medium  $\,$  L- Low

			SEMESTER - IV								
Course C	Code	22UCS04	WEB TECHNOLOGY	L	Т	Р	С				
Core/Ele	ective	Supportive	CORE COURSE - IV	5	0	0	5				
Pre-requ	isite		Web site Design and Development	Aca	demi 2022	c Yea -2023	ir ;				
Course C	Object	tives:									
• To	o attai	ns a basic kn	owledge about HTML and its tags.								
• Ab	bility	to identifying	the basic suitable tags and CSS styles to design	wel	o pag	ges.					
• To	lear	n about the la	inguage of the web: HTML and CSS.								
• To	ounde	erstand the b	asic JavaScript syntax and structures.								
• To	ounde	erstand the ba	asic tools and applications used in web publishi	ng.							
Expected	l Cou	rse Outcomes	5:								
On the su	iccess	ful completio	on of the course, student will be able to:								
CO1	Descr proto	ibe the con col.	cepts of WWW including browser and HT	ГF ŀ	K1/K	2/K	4				
CO2 f	List t friend	he various H lly web pages	user K2/K3/K4/ K5								
CO3	Devel with o	op the mode lifferent layo	e \$ K2/K3/K4/ K5								
CO4 (	Gain I	H H	K2/K3/K4/ K5								
CO5	Be ab conte:	le to embed nt into web p	web technology concept to create social med ages.	lia H H	<2/К <6	3/K4	ť /				
<b>K1</b> - Re	emen	nber; <b>K2 -</b> Un	derstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evalua	te; <b>F</b>	<b>K6</b> - (	Creat	е				
Unit:	Ι		Web Essentials		12 l	nours	3				
The Wor	ld W	ide Web-HT	TP Request Message: Overall Structure, Requ	iest-	URI,	Req	uest				
Method-I	HTTP	Response Me	essage-Web Clients-Web Servers.								
Unit:	II		HTML		12 l	nours	;				
Basic HT Images –	ML, F Simp	ormatting an le HTML forr	d Fonts, commenting Code – Color – Hyper lin ns – Frames – Frame sets – Audio / Video.	k – L	ists ·	- Tab	le –				
Unit: I	II		Style Sheets		12 l	nours	3				
CSS-Intro	oducti	ion to Cascad	ing Style Sheets-Features- Syntax – Colors – For	nts -	Bord	er – I	Box.				
Unit: I	IV	(	Client- Side Programming		12	nours	;				
Introduct Functions	tion J s-Obj	avaScript -Sy ects-Arrays-E	ntax Variables and Data Types-Statements- Op Built-in Objects-JavaScript Debuggers.	perat	tors-	Lite	als-				
Unit: `	V		Java Server Pages		12 l	nours	3				
Introduct and JSP-T	tion t Γag Li	o Java Serve braries and F	r Pages-Running JSP Applications-Basics JSP-J Files-Support for the Model-View-Controller Pa	ava Iradi	Bean: gm.	s Cla	sses				
			Total Lecture hou	rs	60 1	nours	;				
TEXT BC	OOKS	<b>b</b>		<u> </u>							
1	Jeffery	y C. Jackson-"V	Web Technologies", Pearson, 2012.								
2	Xavie	<i>Kavier, C</i> , "Web Technology and Design", New Age International,2011.									

REFERE	NCE BOOKS
1	Laura Lemay, Rafe Colbum ,JennifierKymin-"Mastering HTML,CSS,&JavaScript",BPBPublication,2016.
2	Ralph Moseley, M.T Savaliya-"Developing Web Application", Wiley India, 2013.
3	<i>Deitel, Deitel, Goldberg,</i> "Internet & World Wide Web How to Program", Third Edition, Pearson Education, 2006.
4	U. K. Roy, - "Web Technologies", Oxford Higher Education, 2003.
WEB RE	FERENCES
1	https://www.w3schools.com/css
2	https:// tutorialspoint.com/html
3	www.apachefriends.org
4	https://www.w3.org/standards/webdesign/htmlcss
ASSIGN	IMENTS
1	Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work.
2	Design a web page using Java Script and CSS to display the days on which your birthday falls on next 20years.
3	Develop a web based application for online purchasing of products with payment facility
Course l	Designed By
Dr.D.Chi	tra
L	

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	Μ	Μ	S	Μ	S	L	S	Μ	Μ	Μ
CO2	Μ	Μ	S	Μ	S	L	S	Μ	S	Μ
CO3	Μ	Μ	S	S	S	L	S	Μ	S	S
CO4	Μ	S	S	S	S	L	S	S	S	S
CO5	Μ	S	S	Μ	S	L	S	S	S	S

S– Strong; M- Medium;L- Low

SEMESTER - IV											
Course C	ode	22UCSP4	WEB TECHNOLOGY LAB	L	Т	Р	C				
Core/Elec	tive/S	upportive	CORE PRACTICAL - IV	0	0	3	3				
Pre-requi	site		Knowledge on programming language	Acad	demi 2022	ic Ye -202	ar 3				
Course O	bjecti	ves:									
• ]	Го cre	ate more HTM	IL documents with scripting languages	_							
• '	l'o dev	velop web base	ed application using suitable client side techn	lolo	gies.						
On the su	Cours	ul completion	of the course, student will be able to:								
	Abili		nd implement a basis website		V1/	V2/	V2				
	ADII		nu implement a basic website.		κ1/	π2/	K3				
CO2	impl	ementation of	Evarious style tags.	į	K4/	K5/I	K6				
CO3	CO3 Apply Programming skills to develop various programs using Java script.										
CO4	CO4 Understand and know how to use web programming languages.										
CO5Effectively use client-side technologies (HTML, CSS and Java Scripts) to implement static websites.K3/K4/K5											
<b>K1 -</b> Re	ememl	ber; <b>K2</b> - Unde	rstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evalu	ate;	K6 -	Cre	ate				
Practical 1 3 hours											
Design a p the user c in the text	page t licks t t.	hat has one in he submit but	put, which can take multi-line text and a sub ton, it should show the number of characters	omit 5, wo	butt ords	ton. ( and ]	Once lines				
Practica	al 2				3	3 hou	ırs				
Design a p a country propertie	oage t , its c s of th	hat contains a apital should e font of the ca	selection box with a list of 5 countries. When be printed next to the list. Add CSS to custo apital (color, bold and font size).	n th omiz	e use e th	er sel e	lects				
Practica	al 3					3 hoi	urs				
Write a Ja	vaScr	ipt to demonst	rate simple calculator.								
Practica	al 4					3 hoi	ars				
Write a Ja	ivaScr	ipt to find age	of a person by getting DOB as input.								
Practica	al 5					3 hoi	ars				
Write a Ja should ine	avaSci clude	ript code bloc the day, mont	k using arrays and generate the current da h and year.	ite i	n wo	ords,	this				
Practica	16				3	3 hou	ırs				
Demonstr and Docu	rating ment.	different Java	Script Objects such as Window, Navigator, F	listo	ory, l	Loca	tion,				
Practica	al 7				3	3 hou	ırs				
Validate t	he Re	gistration, use	r login and payment by credit card pages usi	ng J	avaS	Scrip	t.				

Practical 8		3 hours						
Write a HTML p	age including any required JavaScript that takes a number fr	om one text						
field in the range of 0 to 999 and shows it in another text field in words. If the number is								
out of range, it should show "out of range" and if it is not a number, it should show "not a number" message in the result box.								
Practical 9 3 hours								
Write a JavaScript code that displays text "TEXT-GROWING" with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays "TEXT-SHRINKING" in BLUE color. Then the font size decreases to 5pt.								
Practical 10		3 hours						
Create a form fo	or Employee information. Write JavaScript code to find DA,H	RA ,PF,TAX,						
Gross pay, Dedu	ction and Net pay.							
Total Practical hours 30 hours								
Course Designed By								
Dr.D.Chitra								

COs/ PSOs	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO8	PSO 9	PSO1 0
C01	Μ	S	L	L	S	L	S	Μ	Μ	L
CO2	Μ	S	L	Μ	S	L	S	Μ	Μ	L
CO3	S	S	Μ	S	Μ	Μ	Μ	L	L	L
CO4	Μ	S	Μ	Μ	S	L	S	Μ	L	Μ
CO5	L	L	Μ	Μ	S	L	S	Μ	L	Μ

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}$  Medium  $\,$  L- Low

		SEMESTER - IV							
Course Co	de 22UCSS2	IMAGE EDITING TOOL	L	Т	Р	С			
Core/Electi	ve/Supportive	SKILL ENHANCEMENT COURSE - II	0	0	2	2			
Pre-requisi	ite	Knowledge on GUI interaction	A	caden 2022	ic Yea -2023	r			
Course Ob	jectives:	·							
• To	develop skills to de	sign various types of art work in digital form	at.						
• To	deliver skills that s	upport the organization's strategic goals.							
Expected Course Outcomes:									
On the succ	cessful completion	of the course, student will be able to:							
C01	Understand and c components.	lesign a business logo, a flyer using template a	and	K1/	K2/K3	3			
CO2	Acquire skill set to develop video ad and animate pages with graphical images.K4/K5/K6								
CO3	Expose the creativ	xpose the creativity for designing certificate and calendar. K3/K-							
CO4	CO4Apply the knowledge gained in designing a website and visiting card for business.K2/K3/K6								
CO5	Ability to develop	calligraphy and natural art using system.		K3/1	K4/K5	/К6			
<b>K1</b> - F	Remember; <b>K2 -</b> Ur	derstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Eval	uate;	<b>K6</b> - C	reate				
Practical	1 & 2 Des	ign features of Text effect and Blending effe	cts		4 hou	ırs			
1. Design a	a Greeting Card for	Birthday using different text effects.							
2. Apply v	arious filter and bl	ending effects to an Image.							
Practical	3 & 4 Desig	gn to develop image dissection using clone to	ools		4 hou	ırs			
3. Create a	a Pattern using Pat	ern Stamp Tool and Clone Stamp Tool.							
4. Create I	Plastic Surgery for	the Nose.							
Practical	5&6	Design to learn Inking and Line art			4 hou	ırs			
5. Design a	an art form of any o	bject to implement inking and line art.							
6. Draw a	face of a human us	sing GIMP.							
Practical	7 & 8	Design masking and cutting images			4 hou	ırs			
7. Implem	ent quick mask us	ing GIMP.							
8. Do laye	r mask using GIMI	Design various types of filters			1 hor	110			
9 Design	text affect using Cl	MD			4 1101	115			
7. Design text effect using GIMP. 10. Implement Lighting and shading in GIMP									
		Total Pract	ical h	ours	20 ho	urs			
Course Designed By									
Mr.V. Vince	ent Arokiam Arul I	Raja							

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	L	S	L	L	S	L	L	L	Μ	М
CO2	L	S	L	L	S	L	L	L	М	М
CO3	L	S	L	Μ	S	L	L	L	М	М
CO4	L	S	L	Μ	S	L	L	L	М	М
CO5	L	S	L	S	S	L	L	L	М	М

S-Strong; M- Medium; L-Low

SEMESTER - IV											
Course Co	ode	22UCSN2	WEB DESIGN : ADVANCED	L	Т	Р	С				
Core/Elec	tive/S	upportive	NON-MAJOR ELECTIVE COURSE -II	2	0	0	2				
Pre-requisite Knowledge on HTML & CSS							ear				
Course O	bjectiv	ves:									
• To p	orovide	e basic idea o	n create a table within a web page.								
• Top	orovid	e insight on v knowledge i	arious elements of HTML.								
<ul> <li>To prepare the students for developing web page using HTML &amp; CSS.</li> </ul>											
Expected	Cours	e Outcomes:									
On the suc	ccessfu	ll completion	of the course, student will be able to:								
CO1 Ur	ndersta	and the conce	pt of HTML Tables.			K1/K	2				
CO2 Ap	2 Apply various style sheets in CSS.										
CO3 Ur	Understand and Apply various colors and background style concepts with CSS.										
CO4 De	emons	trate differen	t font & text with CSS			K3/K	4				
CO5 De	Develop the concept of various borders & Margin and to create a K4/K6										
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze: K5 - Evaluate: K6 - Create											
Unit: I HTML Tables 5 hours							ırs				
Table Heading - Cell padding and Cell spacing Attributes - Col span and Row span Attributes - Tables Backgrounds - Table Height and Width - Table Caption.											
Unit:	II		HTML Styles-CSS			5 hou	rs				
HTML & C	SS Sty	le Sheet - CSS	Syntax - CSS in three ways - External Style Sheet - Ir	nterr	nal Sty	le Shee	et -				
Inline Styl	e Shee	t.									
Unit: l	III		CSS Colors & Backgrounds			5 hou	ırs				
CSSColors:	: Backgi	round color – T	extColor – BorderColor – RGBColors - HEXColors -	HSI	Color	S.					
CSS Backgro	ounds :	Background In	nage – Background Repeat – Background Size – Backgro	ounc	l attac	hment					
Unit: I	IV		CSS Font & Text			5 hou	ırs				
CSSFont: F	ontfam	nily -Fontsize -	Fontstyle – FontVariant – FontWeight.								
CSS Text: T	Fext Dire	ection – Text a	lign – Text Declaration – Text Shadow – Text Transfor	m		_ 1					
Unit:	V		CSS Border & Margin			5 hou	rs				
CSS Border	: Borde	r Color – Bordei	width – Border Style - Border Shorthand.								
CSSMargin	: Margi	in Bottom – Ma	rgin left – Margin right – Margin top – Margin Collapse.								
Total Lecture hours 25 hours											
TEXT BOOKS											
1 https://www.w3schools.com/html/											
REFERENCE BOOKS											
1 <i>C.Xavier,</i> "World wide web design with HTML", Tata McGraw Hill, 2 <sup>nd</sup> Reprint 2000.											
2 And	2 <i>Andy Holyer</i> , "HTML in easy steps", Dream Tech Press, 2001.										
3 Mik	æ McGr	ath, "CSS in easy	steps", 4 thedition, January 2020.								

WEB	WEB REFERENCES								
1	https://www.tutorials.pointcom/html/								
2	https://www.w3.org/standards/webdesign/htmlcss								
ASSI	ASSIGNMENTS								
1	Design a Webpage using tables								
2	Design a Webpage using forms								
3	Design a web page with internal and external style sheets.								
4	Design text effects using CSS.								
Case S	Case Study								
1	Website Design and Development Using HTML & CSS								
Course Designed By									
Dr. M	.Malathi								

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	L	L	L	L	L	L	S	L	L	L
CO2	Μ	Μ	Μ	Μ	Μ	L	S	L	Μ	L
CO3	L	Μ	L	L	Μ	L	S	Μ	Μ	L
CO4	М	Μ	Μ	Μ	S	L	S	Μ	Μ	L
CO5	Μ	S	Μ	S	S	L	S	Μ	S	L

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}\, {\rm Medium}\,$   $\,{\bf L}\text{-}\, {\rm Low}\,$ 

SEMESTER - V											
	0 1		COMPUTER ORGANIZATION		-						
Course	Code	22UCS05	& ARCHITECTURE	L	Т	P	C				
Core/ <del>Ele</del>	ective/	Supportive	CORE COURSE -V	5	0	0	4				
Pre-requ	isite		Understand Functional units of a Academ Computer system 2022								
Course (	Object	tives:									
<ul> <li>To co co</li></ul>	<ul> <li>To built all extensive knowledge on the basic applications and the components of computer.</li> <li>To study the number systems and binary codes.</li> <li>To learn about digital logic gates and Boolean algebra.</li> <li>To gain knowledge of combinational and sequential circuits.</li> <li>To help students in understanding various integrated circuits and registers.</li> <li>To familiarize the basics of CPU and I/O interface.</li> </ul> Expected Course Outcomes:           On the successful completion of the course, student will be able to:           CO1         Understand the data representation and work with different k1/K2/K3/ k4										
CO2	Ability to design logic circuits and simplification techniques     K1/K2/K3/K4										
CO3Identification of the basic components of combinational and sequential circuits.K1/K2/K3							3				
CO4	Comp	pare the vario	ous types of integrated circuits and registers.	K2	2/K3	<b>3/</b> K4	ŀ				
CO5	Demo	onstrate basi	c knowledge about CPU and I/O interface	KB	8/K4	K5/K5	5				
<b>K1</b> - R	lemen	nber; <b>K2</b> - Un	derstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate;	<b>K6</b>	– Cr	eate	,				
Unit	: I		Number Systems and Binary Codes		12	hou	ırs				
Number – Alpha Represer Floating 3 code –	Syste: Nume ntation point ASCII	ms: Binary – eric Represer 1 – Arithmet Representati - EBCDIC – E	octal and Hexa decimal - Conversion – Decimal R ntation – Complements – Fixed-point Representa ic addition, subtraction – Decimal fixed point Re on – Other Binary Codes: Gray Code – weighted Frror Detection Code.	epro tion pres code	esen – 1 senta e – e	tation integration exces	on ger 58-				
Unit :	II		Digital Logic gates and Boolean Algebra		12	hou	ırs				
Digital L Boolean simplific	ogic g Algeb ation	ates: AND, C ora: Basics Id –sum-of-pro	R, Inverter, NAND, NOR, Exclusive-OR, Universal entities of Boolean algebra – Demorgan's Theorer ducts - Product of sum simplification – Don't Care o	Gat m – conc	tes - Maŗ ditio	) ns.					
Unit :	III		Combinational and Sequential Circuits		12	hou	ırs				
Combinational Circuit: Block Diagram of Combinational circuit – Half Adder – Full Adder – Sequential Circuit: SR flip-flop, D flip-flop, JK flip-flop, T-flip-flop, Master-slave flip flop – clocked synchronous sequential circuit – example of a sequential circuit.											
Unit:	IV		Integrated Circuits and Registers		12	hou	ırs				
Integrate Multiple Register Memory	Unit : IVIntegrated Circuits and Registers12 hoursIntegrated Circuits: SSI, MSI, LSI, VLSI, TTL, ECL, MOS, CMOS – Decoders – Encoders – Multiplexers –Registers: Register load –Parallel load - Shift Registers – Bidirectional Shift Registers with parallel load – Binary Counters – Binary counter with parallel load – Memory unit – RAM – ROM – Types of ROMs.12 hours										

Unit : V	CPU and Input-Output organization 12 hours					
Central Proc	cessing Unit: General Register organization – Stack organization – Instruction					
formats – A	ddressing modes – Input-Output organization: Peripheral Devices – Input-					
Output Inter	face – Mode of Transfer.					
	Total Lecture hours 60 hours					
TEXT BOO						
1	Edition, Pearson , 2017.					
REFERENC	E BOOKS					
1	Sanjay Kumar Suman, Bhayalakshmi L, Porselvi S, "Digital Principles and System Design", AU R Edition, Vijay Nicole Imprints Pvt Ltd, 2017.					
2	<i>Willaim Stallings</i> , "Computer Organization and Architecture Designing for Performance", 10 <sup>th</sup> Edition, Pearson, 2016.					
3	<i>Carl Hamacher,Zvonko Viranesic,Safwat Zaky</i> "Computer Organization", 5 <sup>th</sup> Edition, McGraw Hill, 2017.					
WEB REFEI	RENCES					
1	https://www.classcentral.com/course/swayam-computer-organization-and- architecture-a-pedagogical-aspect-9824					
2	https://www.youtube.com/watch?v=0l8D69VKX2k&list=					
<sup>2</sup> PLBInK6fEyqRgLLlzdgiTUKULKJPYc0A4q						
2	https://www.youtube.com/watch?v=v402cj30e0A&list=					
3	PLrjkTql3jnm8AcFgkc5TE_yQgeHEuKYrG					
	https://www.youtube.com/watch?v=M0mx8S05v60&list=					
4	PLBlnK6fEyqRjMH3mWf6kwqiTbT798eAOm					
_	https://www.youtube.com/watch?v=oAneKttKjtA&list=					
5	PL5Rc9H5eTGY6MHqCKAarxhxqT7nipKgun					
6	https://www.youtube.com/watch?v=e4hiRyyQi0A					
ASSIGNM	ENTS					
1	Show that Data Representation.					
2	Construct various types of gates using universal gates.					
3	Show that a JK flip-flop can be converted to a D flip-flop with inverter between the J and K inputs.					
4	Identify the IC types.					
5	Draw neat sketch for interfacing techniques with CPU.					
Course Desi	gned By					
Mr.E. Jayab	alan					

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	S	М	S	S	S	М	L	М	L	М
CO2	S	S	S	S	М	L	L	Μ	М	L
CO3	S	S	L	Μ	М	L	L	L	М	М
CO4	М	S	L	S	М	S	М	L	М	М
CO5	М	S	М	Μ	М	S	L	Μ	S	М

 ${\bf S}$  - Strong  $\, {\bf M}\text{-}$  Medium  $\, {\bf L}\text{-}$  Low

SEMESTER - V											
Course Code	22UCS06	VISUAL PROGRAMMING	L	Τ	Р	C					
Core/ <del>Elective/</del>	Supportive	CORE COURSE- VI	5	0	0	5					
Pre-requisite		Basic Knowledge on Programming Language	Aca 2	dem 2022-	ic Y 202	ear 3					
Course Objecti	ives:										
To analy	yze problems	and determine their requirements.									
• To gain a basic understanding of Database Access & Management using Data Controls.											
To learn about Advanced Data Controls & Data Report.											
• Design,	formulate, ai	nd construct applications with VB.NET.									
Integrat	te variables a	nd constants into calculations applying VB.NET.									
Expected Cour	se Outcomes	:									
On the successf	ful completio	n of the course, student will be able to:									
Desig	n, Create, bu	ild and Debug VB Applications using window									
CO1 Components.											
CO2 Apply loop Structures and Menu operations to create manageable K3/K6											
CO3 Evaluate different types of Data controls & Data Reports. K4/K5											
CO4 Analy	CO4 Analyze Program Requirements. K3/K4										
CO5 To bu Progr	ild windows amming tech	Applications using Structured and object-based niques in VB.Net	K4	/K6							
K1 - Remen	nber; <b>K2</b> - Un	derstand; K3 - Apply; K4 - Analyze; K5 - Evaluate;	K6	– Cre	ate						
Unit: I	Workin	ng with Window Components , Forms, Controls		12	hou	rs					
Components: M	lenu Bar, Sta	ndard Tool Bar, Project Explorer Window, Form la	you	t wir	Idov	N,					
Properties win	Idow, Tool E Is Controls -	Sox, Code Editor window, Object Browser. Forms Variables – Data Types – Constants	s: Pi	rope	rties	5,					
Unit: II	15. CONTIONS -	Statements , Arrays , Database Handling		12	hou	rs					
Arrays - Decisio	on Structure	- Loop structure - Menus: Creating, Adding menu	iter	ns.	liou	10					
Creating Short	cut, Adding	separator Bars. Database Handling: Creating an	d a	ccess	s the	ė					
database by us	ing the Data	Control.									
Unit: III		Data Control , Errors , Data Reports		12	hou	rs					
Using ADO Dat	a control – V	Vorking with Advanced Data Controls: Data List C	ont	rol –	Dat	a					
Combo Control	l Data Gri	d Control – MSH Flex grid Control. Errors: Runtin	1e, 1	Frap	oing	5,					
Unit. IV	S. Data Elivii	NET framework and VB NET	ĸeŗ	<u>12</u>	hou	rs					
Introduction –	Evolution o	f the .NET framework – Overview of the .NET	fran	newo	ork	-					
DLL,COM, COM+, DCOM and Assemblies – Variable Declaration and Initialization – Value											
Data Types – Reference Data Types – Arithmetic Operators – Control Statements.											
Unit: V Inheritance , Polymorphism , Exception Handling 12 hours											
Methods and Arrays – Definition and usage of a class, Inheritance and Polymorphism – Interfaces and Name spaces – Delegates and Events – Exception Handling.											
	- F	Total Lecture ho	ours	60	hou	rs					

TEXT BO	OKS
1	Soma Dasgupta, "Visual Basic – to Advance", BPB Publications
2	<i>C.Muthu</i> , "Visual Basic .Net", McGraw – Hill Education (India) Pvt. Ltd.
REFEREN	ICE BOOKS
1	Mohammed Azam," Programming with Visual Basic 6.0", 2 <sup>nd</sup> Edition.
2	Deitel&Deitel, Visual Basic 6 How to Program, Pearson Education.
3	P.Radnaganesan, Scitech," VB.NET" publications India Pvt Ltd, 2008
WEB REF	ERENCES
1	https://www.tutorialspoint.com/vb.net/vb.net_web_programming.htm
2	http://www.cs.uni.edu/~fienup/cs030s09/lectures/
3	https://en.wikipedia.org/wiki/Visual_programming_language
4	https://docs.microsoft.com/en-us/dotnet/visual-basic/language-reference/
5	http://people.stfx.ca/rpalanis/131/lecture_notes/VB/
ASSIGN	MENTS
1	Branching & Looping
2	Menu & Submenu
3	ADO & DAO Control
4	VB.Net Control Statements
5	Object Oriented Programming Concept using VB.Net
Course D	esigned By
Dr. M.Ma	lathi

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	Μ	Μ	L	Μ	S	L	L	Μ	L	L
CO2	Μ	Μ	L	Μ	S	L	L	Μ	Μ	L
CO3	Μ	Μ	Μ	Μ	S	Μ	L	Μ	Μ	L
CO4	L	Μ	L	L	Μ	L	L	Μ	L	L
CO5	Μ	Μ	L	Μ	Μ	L	L	Μ	L	L

<b>S</b> -	Strong	M-	Medium	L- Low
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	SEMESTER - V								
Course Cod	e 22UCS07	RELATIONAL DATABASE MANAGEMENT SYSTEMS	L	Т	Р	С			
Core/Electiv	ective/Supportive CORE COURSE - VII 5 0								
Pre-requisite		Knowledge on Data structures and Algorithms	A	cadem 2022	ic Yea 2-2023	ır ,			
Course Obje	ctives:								
<ul> <li>Discuss the basic concepts and the applications of database systems.</li> <li>To evaluate normalization, relational algebra and relational calculus</li> <li>Enhanced the knowledge in the area of Structured Query Language.</li> <li>To identify the major challenges in Database security, concurrency control and backup recovery.</li> <li>To know the Distributed databases system, Hierarchical and network databases.</li> </ul>					ackup				
Expected Co	arse Outcomes:	of the course student will be able to.							
CO1 Und of da	erstand the bas tabase systems.	ic concepts and technologies used in the f	ield	K1/K2	2/K4/	/K5			
CO2 Eval	uate the role llus based on the	of the major types of relational algebra Relationship of Transaction Parties.	and	K2/K3	3/K5/	/K6			
CO3 Ana	yze the use of st	ructured Query Language.		K2/K3	3/K4				
CO4 Und data	erstand the rol base security.	e of database security, backup recovery	and	K2/K3	3/K4/	/K5			
CO5 Lean	ned the need onetwork databas	of Distributed database system, Hierarchica ses.	al	K2/K3	3/K4/	/K5			
<b>K1 -</b> Re	member; <b>K2</b> - U	nderstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Eva	luate	; K6 - (	Create	)			
Unit: 1		Introduction to DBMS		12	2 hou	rs			
Introduction Components Logical Data Model – E-R of an E-R Mo Systems (RD	to Database M of a DBMS. Dat Independence. Model – Object-o del – E-R Diagn 3MS).	<b>Tanagement Systems:</b> Benefits of using DBMS <b>Tabase Architecture and Design</b> : Data Abst <b>Data Models</b> : Hierarchical Model – Netwo priented Model. Entity-Relationship (E-R) M ram Conventions – Relationships-Relational I	– Fu ractio rk M <b>Iode</b> Datab	nctions on – Pl lodel – <b>ling:</b> C pase M	s of D hysica Rela ompo anage	BMS – al and tional ments ement			
Unit: I	[	Data Normalization		12	hou?	rs			
<b>Data Normalization:</b> What is Normalization? – Keys – Relationships – First Normal Form – Second Normal Form – Third Normal Form – Boyce-Codd Normal Form (BCNF). <b>Relational</b> <b>Algebra</b> : Relational Algebraic Operations: Union, Intersection and Difference – Cartesian Product- Select – Project – Assignment – Division – Rename –Join. <b>Relational Calculus:</b> Tuple Relational Calculus					orm – t <b>ional</b> oduct- tional				
Unit: I	Jnit: III         Structured Query Language         12 hours								
Structured Q Operators – Queries: Sele queries – Agg	<b>Structured Query Language (SQL):</b> Advantages of SQL – Types of SQL Commands – Arithmetic Operators – Comparison Operators – Logical Operators – Set Operators- <b>Tables and Views</b> . <b>Queries</b> : Select – WHERE clause – GROUP BY clause – HAVING clause – ORDER BY clause – Sub queries – Aggregate Functions–Insert, Update and Delete Operations-Joins and Unions.								
Unit: I	annites Data S-	Database Security	<u> </u>	12	nou	rs volting			
Privileges an Transaction Recovery: Da	<b>Database Security</b> : Data Security Risks – Data Security Requirements – Granting and Revoking Privileges and Roles. Transaction Management and Concurrency Control: Transaction Properties – Transaction States – Concurrency Control – Transaction Management in SQL. Backup and Recovery: Database Backups – Causes of Failures – Recovery Concepts and Terminology								

Uni	it: V	Distributed Databases	12 hours				
Distribut	Distributed Databases: Architecture – Homogeneous and Heterogeneous Distributed Databases –						
Distribute	Distributed Data Storage – Advantages and Disadvantages of Distributed Databases. Hierarchical						
and Network Databases.							
		Total Lecture hours	60 hours				
TEXT BO	OKS						
1	Alexis Leo Nicole Im	on, Mathews Leon, "Essentials of Database Management System prints Pvt. Ltd., Second Reprint 2009.	ms", Vijay				
REFEREN	NCE BOOK	KS					
1	AviSilbers	schatz,HenryF.Korth,S.Sudarshan,"DatabaseSystemConcepts'	) )				
1	McGraw-	Hill, 6 <sup>th</sup> edition.					
2	NileshSha	ah ,"Database Systems Using Oracle", Pearson, 2ndedition.					
WEB REF	FERENCES						
1	https://v	www.w3schools.in/dbms/					
2	http://w	vww.db-book.com/					
3	https://	www.w3schools.com/SQL/					
4	https://v	www.tutorialspoint.com/sql/					
ASSIGN	MENTS						
1	1 Entity-Relationship (E-R)Modeling						
2	2 Data Normalization						
3	Aggregate	e Functions in SQL, Tables and Views					
4	Database	Security					
Course D	Course Designed By						
Dr.D.Chi	tra						

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	L	Μ	S	Μ	S	Μ	L	S	М	L
CO2	L	Μ	S	Μ	S	Μ	L	S	Μ	L
CO3	L	S	S	Μ	S	Μ	Μ	S	S	Μ
CO4	L	S	S	Μ	S	Μ	Μ	S	S	L
C05	L	S	S	Μ	S	Μ	Μ	S	S	L

S - Stror	ng M-	Medium	L- Low
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SEMESTER - V								
Course Code	22UCSM1	SOFTWARE ENGINEERING	L	Т	Р	С		
Core/Elective/Su	apportive	MAJOR BASED ELECTIVE - I	5	0	0	4		
Pre-requisite		Understand the basic information about Software, Project descriptions		Academic Year 2022-2023				
Course Objectiv	ves:							
<ul> <li>To provide an idea for decomposing a problem using analysis, design, implementation, testing and maintenance phases.</li> <li>To know the various phases in software development and the tools available for software engineering.</li> <li>To provide insight on software engineering discipline and the processes of software development.</li> <li>To provide an idea for designing process models for various problems.</li> </ul>						n, ftware e		
Expected Course	e Outcomes:							
On the successfu	l completion	of the course, student will be able to:						
CO1 analyze, systems.	design, verif	y & validate, implement and maintain soft	ware	К1/К	2/K4			
CO2 use the tools.	techniques, s	kills and Computer aided software engine	ering	K1/K	2/K3	3/K5		
Design a CO3 software and ecor	applicable sol e engineering nomics conce	ution in one or more applications domains of approaches that integrate ethical, social, in the second secon	using legal,	К1/К	2/K4			
cO4 expertise	e in designing e needs of an	g, evaluating, and adapting software process advanced development project;	ses to	K1/K K5	2/K3	/K4/		
CO5 acquire effective	skills in ident software sol	ifying and solving user needs and designing ution	g an	К2/К	4/K5			
<b>K1</b> - Reme	mber; <b>K2</b> - U	nderstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Ev	aluate	e; <b>K6</b> - (	Create	•		
Unit: I		Software and Software Engineering		12	2 hou	rs		
The Nature of S Defining a frame	Software-The ework activity	Software Process. <b>Process Models</b> : A G <i>p</i> -Prescriptive Process Models.	enerio	c Proce	ess M	odel-		
Unit: II		Recommended Process Model		12	2 hou	rs		
Requirements D Construction- Pr a Software Enginestructure.	efinition-Pre ototype Evalı neer - The P	liminary Architectural Design-Resource Est lation. <b>Human aspects of Software Engine</b> sychology of Software Engineering - The S	imatio <b>ering</b> Softwa	on-Firs : Chara ire Tea	t Prot cteris m- Te	otype tics of eam		
Unit: III		<b>Requirements Modeling</b>		12	2 hou	rs		
Requirements A	nalysis- Scen	ario-based modeling-Class based modeling	g-Funo	ctional	mode	ling-		
Behavioral mode	eling. Design	concepts: The Design Process-Design Conce	pts-T	he Desi	ign Mo	odel.		
Unit: IV	2 6 . 4	Quality and Security	.ior-i	12	2 hou	rs		
Software Quality	· · Software	quality-line software quality dilemma-Act	sov i	g SOftv	vare o	juality. nd		
Metrics-Formal	Approaches to	o SOA- Statistical Software quality assurance	-Soft	vare re	liabili	tv.		
Unit: V	rr-cacheb t	Software Testing		12	2 hou	rs		
Software Testing       12 nours         Software Testing Fundamentals-Integration Testing-Artificial Intelligence and Regression Testing-Validation Testing.       Software metrics and analysis: Software measurement-Software analytics-product metrics-metrics for testing-metrics for maintenance-metrics for software quality.								

TEXT BO	OKS				
1	Software Engineering-A Practitioner's Approach - Ninth Edition - Roger. S. Pressman, Bruce R. Maxim. MCGraw Hill Publishing Company.				
REFEREN	CE BOOKS				
1	Richard Fairley, "software Engineering Concepts" TMH edition, 22st reprint 2005.				
2	Rajib Mall, "Fundamentals of software engineering" PHI, Third Edition.				
WEB REF	ERENCES				
1	https://www.tutorialspoint.com/software_engineering/index.htm				
2	https://ocw.mit.edu/courses/aeronautics-and-astronautics/16-355j-software-				
2	engineeringconcepts-fall-2005/lecture-notes/				
3	http://nptel.ac.in/downloads/106105087/				
ASSIGNM	MENTS				
1	Software Requirements				
2	Software design				
3	3 Software Coding and Testing				
Course Designed By					
Mr. M. Tl	nangavel				

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	S	Μ	S	Μ	S	Μ	Μ	Μ	S	Μ
CO2	Μ	S	Μ	S	Μ	Μ	L	Μ	Μ	L
CO3	Μ	S	L	Μ	Μ	L	Μ	Μ	Μ	Μ
CO4	Μ	S	L	S	Μ	S	Μ	L	Μ	Μ
C05	Μ	S	Μ	Μ	Μ	S	L	Μ	S	Μ

S - Strong  $\,M\mathchar`-$  Medium  $\,L\mathchar`-$  Low

		SEMESTER - V					
Course Code	22UCSM2	OPEN SOURCE TECHNOLOGY	L T P C				
Core/Elective/	Supportive	MAJOR BASED ELECTIVE - II	5	5 0 0			
Pre-requisiteKnowledge of programming languageAcademic Year 2022-2023						r	
<b>Course Object</b>	ives:						
<ul> <li>To introduce open source methodologies.</li> <li>To expose Students to free Open source software environment and introduces them to use open source packages.</li> <li>For Study the problems with traditional commercial software.</li> <li>To Learn Open source web server, software tools.</li> <li>To understand the basic concept of open source ethics and shared software.</li> </ul>					use		
Expected Cour	rse Outcomes:						
On the success	ful completion	of the course, student will be able to:					
CO1 Ability	y to gather info	rmation about free and open source software.		K1/K2	2/K4		
CO2 Under softw	stand the inst are packages.	allation of various packages in open source		K2/K3	3/K4/	′K6	
CO3 Under	stand Various	version control systems.		K2/K3	3/K4/	′K5	
CO4 The st	udents will be	familiar with working of different web server	s.	K2/K3	3/K5		
Learn CO5 develo softw	ed the need opment model, are.	of Open source technology, open so applications of open sources, and shared	urce	K2/K3	3/K4/	′K6	
<b>K1</b> - Ren	nember; <mark>K2</mark> - U	nderstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Eva	luate	; K6 - (	Create		
Unit: I		Introduction		12	hou	rs	
Introduction: Software, FOS Project.	open Source, F S does not mea	ree Software, Free Software vs. Open Source s in any cost. History: BSD, The Free Software F	softw Found	are, Pu lation a	blic D and th	omain le GNU	
Unit: II		Open Source History		12	hou	rs	
Open Source	History, Initiat	ives, Principle and methodologies. Philosopl	hy : S	Softwar	e Fre	edom,	
Open Source	Development	Model Licenses and Patents: What Is A Li	cense	e, Impo	ortant	FOSS	
Licenses (Apa	che, BSD,GPL, 1	LGPL), copyrights and copy lefts, Patents Ec	onom	nics of	FOSS	: Zero	
Marginal Cost,	Income-gener	ation opportunities, Problems with traditiona	al cor	nmerci	al sof	tware,	
Unit: III		Community Building		12	hou	rs	
Community B	uilding: Import	ance of Communities in Open Source Move	ment	-JBoss	Comn	unity-	
Starting and M	aintaining an (	)pen Source Project - Open Source Hardware				5	
Unit: IV	Unit: IV Server 12 hours					:s	
Apache HTT	P Server and	its flavors- WAMP server (Windows, A	pach	ie, My	SQL,	PHP)-	
Apache, MyS	QL, PHP, JAV	A as development platform.	_	-		-	
Unit: V		Open Source		12	2 hou	(S	
Open source Financial imp	vs. closed so acts of open s	urce Open source government, Open sou source technology, Shared software, Share	irce ed so	ethics. urce.	Socia	al and	
		Total Lecture ho	urs	60	) hou	:s	

TEXT BO	OKS
1	Sumitabha Das "Unix Concepts and Applications", Tata McGraw Hill Education 2006
2	KailashVedera, Bhavyesh Gandhi, "Open Source Technology", University Science press, ker
REFEREN	CE BOOKS
1	<i>Paul Kavanagh</i> , "Open Source Software: Implementation and Management", Elsevier Digital Press
2	<i>Michael Bazzell-</i> "Open Source Intelligence Collection and Analysis", Create space Independent publishing platform 2018.
WEB REF	ERENCES
1	https://www.w3schools.com/wamp
2	https:// tutorialspoint.com/html
3	www.apachefriends.org
ASSIGNM	<b>MENTS</b>
1	Open source principles and methodologies.
2	Open source software benefits and features.
3	Open source Software installation procedures.
Course D	esigned By
Dr.D.Chit	ra

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	L	Μ	L	Μ	S	L	М	S	М	Μ
CO2	L	Μ	L	Μ	S	L	М	S	Μ	М
CO3	L	S	М	Μ	S	L	S	S	S	Μ
CO4	L	S	М	Μ	S	L	S	S	S	Μ
C05	L	S	М	Μ	S	L	S	S	S	М

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}\, {\rm Medium}\,$   $\,{\bf L}\text{-}\, {\rm Low}\,$ 

		SEMESTER - V					
Course Co	de 22UCSM3	MULTIMEDIA SYSTEMS	L	Т	Р	C	
Core/Elect	ive <del>/Supportive</del>	MAJOR BASED ELECTIVE - III	5 0 0				
Pre-requis	Basic knowledge on 2D and 3D Animation	Aca	den 2022	nic Y -202	(ear 23		
Course Ob	jectives:						
• To le	arn the basics ar	nd Fundamentals of Multimedia.					
• To in	troduce Multim	edia Components and Tools.					
• To tr	ain and develop	the Multimedia Projects.					
• To U	nderstand how I	Aultimedia can be Incorporated.					
Expected C	Course Outcome	S:					
On the suce	cessful completi	on of the course, student will be able to:					
CO1 Ur	nderstand the ba	sic concepts & Tools of Multimedia	K1	/K2			
CO2 A	pply the concep	t of Graphics and Images in Various Kinds Media	K2	/k3			
CO3 Ar So	CO3 Analyze the different types of Animation techniques in developing I Software Applications.						
CO4 E	valuate the Vario	ous File Formats and Compression techniques	K4	/K5			
CO5 U	se appropriate d	esign to develop Multimedia Projects.	K5	/K6			
<b>K1 -</b> Rer	nember; <b>K2 -</b> Ur	derstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate;	K6	– Cr	eate	)	
Unit: I		Multimedia Overview		12 h	ours	6	
Introductio	on to Multimed	ia: What is Multimedia – A Concise History o	f M	ultir	ned	ia –	
Combining	content from V	arious Media - Linear vs. Interactive Multimedia	- Tl	ne p	urp	oses	
Developme	ent Process – To	ols for Creating and Preparing Media.	111118	s sta	ige	anu	
Unit: II		Kinds of Media	-	12 h	ours	5	
Graphics a	nd Images: The	Role of Graphics and Images in Multimedia - De	sign	ing	Vec	tor	
Graphics -	Creating Raste	r Images – Color theory – Text and Typography:	Tex	t de	fine	ed –	
Typing , Te	exting and E-mai	ling –Typography.					
Unit: III		2D and 3D Animation		<u>12 h</u>	ours	5	
2D and 3D	animation: Ani	mation in multimedia – Kinds of Animation – Ti	adit	iona	1] 		
Animation	files and format	s	SDF	mm	auc	on –	
Unit: IV	Unit: IV Audio 12 hour				ours	5	
Audio Fun	damentals – Re	cording vs. Importing Sound – MIDI and Digital M	lusi	c -Ec	litir	g	
and Manip File Types.	ulating Audio T	racks – Audio File Formats and Compression Sc	hen	nes -	- Aı	idio	
Unit: V		Video	-	12 h	ours	6	
Video mec	hanics – Video	in Multimedia – Analog and Digital Video – Shoo	ting	, and	ł		
obtaining v functionali	video – video co ty: Tools for auti	mpression schemes and file formats – Authoring : noring – Interactive Design.	for 1	nult	ime	dia	
		Total Lecture hours	6	0 ho	urs		

TEXT BOOD	KS					
1	<i>Jennifer Coleman Dowling</i> , "Multimedia Demystified", Tata McGraw Hill, Edition 1, 2011.					
REFERENC	E BOOKS					
1	<i>Robert Reinhardt, Snow Dowd,</i> "Macromedia Flash8 Bible", Wiley Publishing Inc., Edition I, 2006.					
2	<i>Tay Vaughan</i> , "Multimedia Making it work" – Sixth Edition – Tata Mc-GrawHill- 2004.					
3	Malay Pakhira. K , "Computer Graphics, Multimedia and Animations, second Edition , PHI 2010.					
WEB REFEF	RENCES					
1	https://nptel.ac.in/courses/Webcoursecontents//Multimedia%20 Processing/ New_index1.html					
2	https://www.sanfoundry.com/best-reference-books-multimedia-applications					
3	http://www.teleport.com/~cooler/MMMM/making/gif/up.html					
4	http://www.w3.org/Graphics/					
5	http://webreference.com/dev/graphics/tools.html					
ASSIGNME	ENTS					
1	Tools for creating and preparing media.					
2	Animation files and formats.					
3	Tools for authoring.					
4	Editing and Manipulating Audio Tracks					
5	Compression Schemes and File Formats.					
Course Designed By						
Dr.M.Malath	ni					

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	Μ	S	L	Μ	S	L	L	L	Μ	L
CO2	S	S	L	S	Μ	L	L	Μ	Μ	L
CO3	S	S	L	S	S	L	L	Μ	Μ	Μ
CO4	Μ	S	L	S	Μ	L	L	L	L	L
CO5	S	S	L	S	S	L	L	Μ	L	Μ

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}\, \text{Medium}\,$  L- Low

			SEMESTER - V				
Course (	Code	22UCSM4	COMPUTER GRAPHICS	L	Т	Р	C
<del>Core</del> /Ele	ctive <del>/Su</del>	<del>ipportive</del>	MAJOR BASED ELECTIVE -IV	5	0	0	4
Pre-requ	isite		Mathematical Foundation and Image Basics	Aca 2	dem 2022-	ic \ 202	Year 23
Course (	Objectiv	es:					
• T	o Under	rstand the b	asic concepts of Computer Graphics.				
• T C	<ul> <li>To Understand the importance of Raster and Random Scan Systems Video Controller in Image Processing.</li> </ul>						
• T	o Apply	geometric	transformations, viewing and clipping on gr	aph	ical		
0	bjects.						
• T	o Under	rstandvisible	esurfaced etection techniques and illumination	mo	dels	5.	
Expecte	d Cours	e Outcomes:					
On the s	uccessfu	l completion	of the course, student will be able to:				
C01	CO1 To understand the Graphics system and functions of various devices associated with the graphics system.				K1/K2/ K4		
CO2	CO2 To observe the processes behind raster and random scan systems with algorithms in the field of image processing				K1/K2/ K3/K4		
CO3	To acquire the knowledge on 2-D geometric transformations.       K1/K         K3				′K2	/	
CO4	To acqu	uire the knowl	edge on 3-D geometric transformations.		K1/ K3	′K2	2/
C05	To lear	n inputs on in	age processing and apply it into the research		K2/ K5	′K4	/
K1 -	Rememb	oer; <b>K2 -</b> Unde	erstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K</b>	6 -	Crea	te	
Unit: I		Ov	erview of Graphics Systems		12 ha	our	<b>S</b>
Overvie tubes R view St Stereos	Overview of Graphics Systems: Video Display Device-Refresh Cathode – Ray tubes Raster - Scan Displays Random - Scan Displays - Color CRT Monitors -Direct view Storage tubes Flat - Panel Displays Three - Dimensional Viewing Devices, Stereoscopic and Virtual – Reality Systems						
Unit: II	Ra	aster and Ra	ndom-Scan Systems Video Controller	-	12 ho	our	S
Raster-ScanSystemsVideoController-Random-ScanSystemsVideoController- Random-Scan Systems-Input device–Keyboard-Mouse-Trackball - Space ball and Joysticks - Data Glove – Digitizers Image Scanners -Touch Panels - Light pens. Voice Systems - Hard-Copy Devices - Line Drawing Algorithms –DDA Algorithms - Circle generating Algorithm Properties of Ellipses.							
Unit: III		Two Dim	ensional Geometric Transformation	1	12 hc	our	5
Unit: IIITwo Dimensional Geometric Transformation12 hoursTwo Dimensional Geometric Transformation: Basic Transformations - Translation- Rotation-Scaling-Matrix Representations and Homogeneous Coordinates-Other Transformations Reflections Two Dimensional Viewing: Windows to viewpoint coordinate Transformations - Clipping Operations -Point Clipping-Line Clipping- Curve Clipping - Text Clipping - Exterior Clipping.							

Unit: IV         Three Dimensional Geometric Transformations         12 hours
Three Dimensional Concepts : Three Dimensional Display method-
Parallel projection – Depth cueing visible line and surface-
Three Dimensional Geometric and modeling Transformations: Translation -
Rotation - Scaling -Composite Transformations. Three Dimensional Viewing:
Viewing pipeline –Viewing Coordinates-Projections-Parallel Projections-
Perspective Projections.
Unit: V Visible Surface Detection Methods 12 hours
Visible Surface Detection Methods: Classification Visible Surface Detection
Algorithms - Back Face Detection - Depth - Buffer Method - A-Buffer Method -
Scan line method - Depth sorting method - BSP tree method - Area Sub division
Total Lecture hours 60 hours
1 Donald Hearn and M.Pauline Baker, "Computer Graphics", 2ndEdition,
1996.
REFERENCE BOOKS
Johnf. Hughes, Andries Van Dam, Morgan Mcguire, David F.Sklar, James
<i>D.Foley, Steven K.Feiner, Kurt Akeley,</i> "Computer Graphics Principles and Practice" 3 <sup>rd</sup> Edition, Pearson Education,2014.
2 David J. Eck, Hobart and William Smith," Introduction to Computer Graphics", David
<sup>2</sup> J.Eck,2016.
3 <i>Harrington</i> , "Computer Graphics", Second Edition, Tata Mecraw Hill
WEB REFERENCES
1 https://www.geeksforgeeks.org/introduction-to-computer-graphics/
2 https://www.tutorialspoint.com/computer_graphics/index.htm
3 https://ecomputernotes.com/computer-graphics
4 https://edirlei.com/aulas/cg-2022/CG_Lecture_03_Transformations_2022.html
5 https://www.javatpoint.com/computer-graphics-introduction-of-transformations
ASSIGNMENTS
1 Applications of Graphics
2 Research Perception : 2-D and 3-D Transformation
3 Algorithms on Surface Detection Method
Course Designed By
Dr. R.Pugazendi

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	S	Μ	L	L	L	S	L	Μ	L	L
CO2	S	L	L	L	L	L	L	Μ	L	L
CO3	S	Μ	L	L	L	L	L	Μ	L	L
CO4	S	Μ	L	L	L	L	L	Μ	L	L
CO5	S	S	Μ	Μ	L	Μ	L	Μ	L	L

S - Strong M- Medium L- Low

			SEMESTER - V				
Course	Code	22UCSP5	RDBMS and Visual Programming	L	Τ	Р	С
Core/E	lective	/Supportive	CORE PRACTICAL - V	0	0	3	3
Pre-req	uisite		Knowledge in Database &GUI Application	Ac	adem 2022∙	ic Ye •2023	ar
Course	Objec	tives:					
<ul> <li>To Present SQL and procedural interfaces to SQL Comprehensively.</li> <li>To give an introduction to systematic database design approaches.</li> <li>To give a good formal foundation on the relational model of data.</li> <li>To provide design, formulate, and construct applications with Visual Basic.</li> <li>To apply the various constraints in Visual Basic</li> </ul>							
Expecte	d Cou	rse Outcome	5:				
On the s	success	sful completio	on of the course, student will be able to:				
C01	Unde conce	erstand, appro epts of databa	eciate and effectively explain the underlying use technologies.		К2,К	3,K5	
CO2	Design and implement a database Schema for a given problem domain.K2,K3,K5,K6						
CO3	Prog funct	ramming PL/ tions, and cur	SQL including stored procedures, stored sor packages.		K4,K	5,K6	
CO4	Unde	erstand the Vi	sual Studio IDE and its common features.		К2,К	3,K5,	K6
CO5	Unde	erstand Visua	Basic applications and controls.		К1,К	4,K5,	K6
<b>K1</b> - 1	Remen	nber; <b>K2</b> - Un	derstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evalu	iate;	K6 -	Creat	e
Practica	al 1				3	hour	s
addres Create Insert f Update	a tabl s2, city a prim ive rov the ta	y, state, pin o ary key cons ws into the t ble client m	code, remarks, balance due and implement traint on the column client no able. aster	t the	e, add follo	wing	1,
Add a r	new co	olumn in the	table: Age				
Remov	e a col	lumn from tl	ne existing table.				
Change	es the	existing dat	a type of a column in table using ALTER/I	MOL	$\frac{1}{2}$	hour	
Create	ar 2 a tabl	e name stud	ent with fields of student id student nam	e cla	S M	1 M2	<u>s</u> МЗ
total, average, result, grade and implement the following Compute total, average, result, grade using formula. Display all the students with average above90. Display all the students in class II B.Sc. who have an average value above80.							
Display Display Display Select u	Display the rank of all the students. Display the grade wise information for the students. Display student names that start with 'K' Select unique student names from the table.						

Practical 3	3 hours
Create the following table with fields: employee (employee-name, works(employee-name, company-name, salary), company(company manages(employee-name, manager-name) Give an expression in SQL following queries:	, street, city), 7-name, city), for each of the
Find the names, street address, and cities of residence for all employe work for 'ABC Corporation' and earn more thanRs.10,000. Find the names of all employees in the database who live in the sam cities as the companies for which they work. Find the names of all employees in the database who live in the sam and on the same streets as do their managers. Find the names of all employees in the database who do not work for 'ABC Corporation'. Assume that all people work for exactly one company. Find the names of all employees in the database who earn more than employee of 'XYZ Corporation'. Assume that all people work for at more company. Assume that the companies may be located in several cities. F companies located in every city in which 'XYZ Corporation' is located. Find the names of all employees who earn more than the average employees of their company. Assume that all people work for at most on	es who ne e cities n every ost one 'ind all e salary of all ne company.
Practical 4	3 hours
Write a PL/SQL to split the student table into two tables based on resu table for "Pass" and another for "Fail"). Use cursor for handling rec student table. Assume necessary fields and create a student's details tab	llt (one ords of le. <b>3 hours</b>
Write a DL (SQL black to implement the gap cont of Lain	
write a PL/SQL block to implement the concept of join	
Practical 6	3 hours
Write a VB Program to construct of an Arithmetic Calculator.	
Practical 7	3 hours
<ul> <li>Develop a Visual Basic Program to simulate the traffic signals, by using follow conditions.</li> <li>i) Form consists of three signals RED, YELLOW and GREEN in an ord wise.</li> <li>ii) Form consists of one timer label, to display the Time out of the sign iii) While transforming the signal from REG to Green, signal travel to signal.</li> <li>iv) Time out for RED signal is 180seconds.</li> <li>v) Time out for Green signal is 120seconds.</li> <li>vi) Time out for YELLOW signal is 60seconds.</li> </ul>	ing der of column nal. YELLOW
Practical 8	3 hours
Design an application to prepare Students Mark Sheet.	

Practical 9	3 hours
Write a VB.NET Program using Polymorphism.	
Practical 10	3 hours
Write a VB.NET Program using Delegates and Events.	
Total Pr	actical hours 30 hours
Course Designed By	

Dr. M.Malathi & Dr.D.Chitra

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	Μ	Μ	S	Μ	L	L	S	S	М	L
CO2	М	Μ	S	Μ	L	L	S	S	М	L
CO3	М	Μ	S	Μ	L	L	S	S	М	L
CO4	М	Μ	Μ	L	Μ	L	S	S	L	L
CO5	Μ	Μ	Μ	L	Μ	L	S	S	L	L

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

S - Strong  $\,M\mathchar`-$  Medium  $\,L\mathchar`-$  Low

		SEMESTER - V				
Course Coc	le 22UCSS3	GRAPHIC DESIGN	L	Т	Р	С
Core/Electi	<del>ve</del> /Supportive	SKILLE ENHANCEMENT COURSE - III	0	0	2	2
Pre-requisit	e	Creativity and Basic Knowledge on GUI interaction	Ac	adem 2022	ic Ye •2023	ar
Course Obj	ectives:					
<ul> <li>To develop skills to design various types of art work in digital format.</li> </ul>						
• 10 ut		support the organization's strategic goals.				
Expected Co	ourse Outcome	s:				
On the succe	essful completion	on of the course, student will be able to:				
CO1 Und	erstand and de ponents.	sign a business logo, a flyer using template a	and	K1/	K2/H	٢3
CO2 Acq mus	uire skill set to ic.	develop video ad and animate pages with		K4/	К5/К	6
CO3 Expose the creativity for designing certificate and calendar. K3/K4/K6						6
CO4 Apply the knowledge gained in designing a website and visiting K2/K3/K6 card for business.						6
CO5 Abil	CO5 Ability to develop own resume and brochure K3/K4/K5/K6					
<b>K1</b> - Rem	ember; <b>K2</b> - Un	derstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Eval	uate;	K6 -	Creat	e
Practical 18	2	Design a business logo and a flyer		4	hour	s
<ol> <li>Design a</li> <li>Design a</li> </ol>	business logo v flyer using the	vith the existing template by modifying the to existing template by editing some componer	ext a nts.	nd co.	lor.	
Practical 3&	4 Develo	op a Video ad and Animate pages with mu	usic	4	hour	S
3. Design a	video ad for bu	siness using an existing template.	c			
Practical 5&	.6 Design	a Certificate and Monthly Calendar with creativity	<u>.</u> 1	4	hour	s
5. Design a 6. Design a	Certificate for a monthly calend	an event with your college name. ar for the year 2022.				
Practical 7&	: 8 I	Design a Website and Business card		4	hour	s
7. Create a 8. Design a	website design business card o	from existing templates by editing it with yo on your own without template.	ur ov	vn im	ages.	
Practical 9&	10 Develop	own Resume and Brochure in digital form	at	4	hour	s
9. Create ar	nd design your	own resume using an existing template.				
10. Design a	brochure for a	n event on your own without using the temp	olate.			
		Total Practical h	nours	20	hour	5
Course Desi	gned By					
Mr. E.Jayaba	alan					

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	S	Μ	L	L	Μ	Μ	L	Μ	Μ	Μ
CO2	S	Μ	L	S	S	Μ	S	Μ	Μ	S
CO3	S	Μ	L	S	Μ	Μ	S	S	Μ	Μ
CO4	S	Μ	L	Μ	Μ	Μ	L	Μ	Μ	Μ
CO5	S	Μ	L	Μ	L	Μ	L	Μ	Μ	Μ

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

S - Strong  $\,M\mathchar`-$  Medium  $\,L\mathchar`-$  Low

			SEMESTER - VI				
Course	Code	22UCS08	<b>OPERATING SYSTEMS</b>	L	Т	Р	C
Core/Ele	ective/	Supportive	CORE COURSE - VIII	5	0	0	4
Pre-requ	isite		Understand basic functional units of a computer system, etc	Aca	den 2022	nic Y -202	′ear 3
Course (	Object	ives:					
• T	• To understand the basic concepts and function of operating systems						
• To	• To understand processes and technical concept of deadlock						
• T(	n loarn	nhysical an	d virtual memory				
		l physical an	f processor and disk scheduling				
• 10	u gaini	kilowieuge c					
• T(	o help	students in i	inderstanding file systems and case study				
Expected	l Cour	se Outcome	S:				
On the su	access	ful completio	on of the course, student will be able to:				
C01	Under enviro	rstand the onments	system view , management and computing	K1	/K	2/K	4
CO2	CO2Ability to design process state and deadlock avoidance.K1/K2/K3/K5						
CO3	CO3Analyze various memory management schemes.K1/K2/						
CO4	CO4Analyze processor scheduling and disk optimization.K1/K2/HK4/K5						3/
CO5	Demoi	nstrate files s	systems in various operating systems.	K2	2/K4	4/K	5
<b>K1</b> - R	lemem	ber; <b>K2 -</b> Un	derstand; K3 - Apply; K4 - Analyze; K5 - Evaluate;	K6	– Cr	eate	
Unit	: I	Intr	oduction and Computing Environments		12 h	ours	
Early His	story -	What opera	ting system do - System: View - Organization -	Arcł	itec	ture	-
Structur	e – 0	perations. N	Aanagement: Process, Memory, Storage and I/	0. (	Com	puti	ng
Environ	ments:	Traditional	Computing, Mobile Computing, Distributed Sy	ster	ns, (	Clier	nt-
Server C	omput	ing, Virtuali	zation, Cloud Computing, Real-time Embedded Sys	sten	is ar	ıd	
Open So	urce O	perating Sys	tems.				
Unit:		·	Process and Deadlock		12 h	ours	
Process	Concep	ot - Process	states - Process state transitions – Process Co	ntro	I RI	OCK	-
Interrup	t Proce	essing – Dea	alock and indefinite postponement – introduction	- E	xam	pies	_
detection	y cond	ntions – Maj	or areas of Deadlock research – Deadlock prevent	011,	avoi	uanc	:e,
Unit ·		very.	Physical and Virtual Memory		12 h	01176	
Real St	nrage.	Storage C	reganization Management storage management	nt .	Stra	tegi	es
Contigue	onage.	vs. Non c	ontiguous storage allocation fixed variat	ole	nai	titio	n.
Multipro	gramr	ning. Virtua	Storage Organization: Basic concepts paging se	gme	enta	tion	_
virtual st	orage	managemen	t: Page Replacement Strategies	0			
Unit :	IV	0	Processor and Disk Scheduling	-	12 h	ours	
Job and	Proces	sor Schedul	ing: Scheduling objectives – Preemptive vs Non-I	Pree	mpt	ive	
Scheduli	ng – P	Priorities – I	Deadline Scheduling – FIFO – RR – Quantum Size	e – S	SJF -	- SR	Т –
HRN – M	lultilev	vel Feedback	Queues. Disk Performance: Seek Optimization.				
Unit :	V		File Systems and Case Study	-	12 h	ours	
File and	Databa	ase systems:	File system - Functions – Data Hierarchy - Blockin	ig ar	d B	uffer	ing
– File Or	ganiza	tion – Case S	Study: UNIX system – The Shell – The File System.	I			
			Total Lecture hours	6	0 ho	urs	

TEXT BOO	KS
1	<i>Abraham Silberschatz, Peter Baer Galvin,</i> Greg Gagne, "Operating System Concept", Ninth Edition, Wiley.
2	H.M.Deitel, " Operating Systems", Second Edition, Pearson Education.
REFERENC	E BOOKS
1	<i>Andrew S. Tanenbaum,</i> "Modern Operating Systems", 2nd Edition, PHI private Limited, New Delhi, 2008.
2	<i>William Stallings</i> , "Operating Systems - Internals & Design Principles",5thEdition, Prentice - Hall of India private Ltd, New Delhi, 2004.
3	<i>Sridhar Vaidyanathan</i> , "Operating System", 1st Edition, Vijay Nicole Publications, 2014.
WEB REFEI	RENCES
1	https://www.os-book.com/OS9/slide-dir/index.html
2	https://pdfslide.net/documents/operating-systems-2nd-edition-by-h-m- deitel.html
3	http://www.csc.villanova.edu/~mdamian/Past/csc8410sp07/
4	https://www.youtube.com/results?search_query=operating+system+history+ neso+academy
5	https://www.youtube.com/watch?v=aF2uRmibwco&list= PLrikTal3inm9U1tSPnPOW0GIGNkUwBEy- (Education4u)
6	https://www.youtube.com/watch?v=S-qPQiD0vqU&list=PLBMNl- szJPPffhKguMDHb2GW9lnQsBZra
ASSIGNM	ENTS
1	Identify the various operating system structure.
2	Process management in Unix
3	Memory Management in Linux
4	Literature survey on Scheduling techniques
5	Comparison of various operating systems in computing environments.
Course Desi	gned By
Mr. E. Javab	palan

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	S	Μ	S	S	S	Μ	Μ	Μ	S	Μ
CO2	S	S	S	S	Μ	Μ	L	Μ	Μ	L
CO3	S	S	L	Μ	Μ	L	Μ	Μ	Μ	Μ
CO4	Μ	S	L	S	Μ	S	Μ	L	Μ	Μ
CO5	Μ	S	Μ	Μ	Μ	S	L	Μ	S	Μ

 $<sup>{\</sup>bf S}$  - Strong  $\,{\bf M}\text{-}$  Medium  $\,$  L- Low

			SEMESTER - VI							
Course	Code	22UCS09	PROGRAMMING IN JAVA	L	Т	Р	С			
Core/El	ective	/Supportive	CORE COURSE - IX	5	0	0	5			
Pre-requ	ıisite		knowledge of computing fundamentals and programming	Academic Year 2022-2023						
Course	Objec	tives:								
<ul> <li>To identify Java language components and how they work together in applications.</li> <li>To design and program stand-alone Java applications.</li> <li>To learn how to design a graphical user interface with Java on completion of the course.</li> <li>To learn why Java is useful for the design of desktop and web applications</li> <li>To learn lava generics and how to use the Java Collections API</li> </ul>										
Expecte	d Cou	rse Outcome	S:							
On the s	uccess	sful completio	on of the course, student will be able to:							
C01	CO1 Understand the fundamentals of Java programming. Choose the right k2/K3 problem.Apply the specification of syntax rules for numerical constants and variables similarly other data types. Ability to work									
C02	2Design and develop Java program to evaluate simple expressions and logical operations. Illustrate the control statements to write basic Java programs.Use the comparisons and limitations of the various programming constructs and choose the right one for the task in hand. Improve the ability to use conditional statements and loopsK2/K3/K4									
CO3	structures.Ability to work with arrays of complex objects. Develop & ImplementJava programs with suitable modules to solve the given problem.Identify the usage of arrays, strings, functions, etc. Improve the ability to develop function-oriented programs. Along with understanding of the distinction for passing arguments to/from functions. Modularize the code with functions so that they can be									
CO4	reused. Implement different Operations on collection objects. Analyze the features of collection objects in custom programming. Evaluate the importance of web application using Java – AWT components. Improve my understanding of the use of server and client side programming also has improve the ability to use the dynamic memory									
CO5	Lear of us to in contr stear and v	n to create sin ing GUI Appl npose their rols in Java – n or byte rea writing from a nber; <b>K2</b> - Un	mple web applications in JAVA. Also get knowledge ication development in JAVA. Emphasis the ability graphics knowledge by learning various graphic AWT. Stress to find the various Input and Output der and writer. Import the importance of reading sequential and random files in JAVA derstand; <b>K3</b> - Apply: <b>K4</b> - Analyze: <b>K5</b> - Evaluate: <b>K</b>	K2	2/K - Cr	3/K eate	.5			

Unit : I	Java Construct and Malleable of operators on variable	12 hours							
Java Evoluti	on – Simple Java Program – Java program structure – Java T	okens – Java							
Statements ·	- JVM - Command Line Arguments - Constants, Variables, and	Data Types –							
Declaring an	d Giving Values to Variables - Scope of Variables - Symbolic Con	nstants – Type							
Casting – St	andard Default Values - Operators and Expressions: Arithmetic -	- Relational –							
Logical - Ass	ignment - Increment and Decrement - Conditional - Operator Prec	edence -							
Mathematica	al Functions.								
Unit : II	Branching and Looping	12 hours							
Decision Ma	king and Branching: Introduction – Decision Making with if State	ment – Simple							
if Statement - The ifelse Statement - Nesting of ifelse Statement - The else if Ladder -									
The Switch Statement – The ?: Operator. Decision Making and Looping: Introduction – The									
While Stater	nent – The Do Statement – The For Statement – Jumps in Loops – L	abelled Loops.							
Classes, Obj	ects and Methods: Introduction - Defining a Class - Methods	Declaration -							
Creating Obj	ects – Accessing Class Members – Constructors – Methods Overlo	oading – Static							
Members –	Nesting of Methods - Inheritance - Overriding Methods - Final	Variables and							
Methods – I	Final Classes – Finalizer Methods – Abstract Methods and Class	es– Visibility							
Control.									
Unit : III	Modularization of Programming using Packages	12 hours							
Arrays, Strin	igs and Vectors: One-dimensional Arrays – Creating an Array – Tw	o dimensional							
Arrays – Str	rings – Vectors – Wrapper Classes. Interfaces: Defining Interface	es – Extending							
Interfaces –	Implementing Interfaces – Accessing Interface Variables. Packa	ages: Java API							
Packages – l	Jsing System Packages – Naming Conventions – Creating Packages	<ul> <li>Accessing a</li> </ul>							
Package – U	sing a Package – Adding a Class to a Package – Hiding Classes.								
Unit : IV	Web Application and Multi-Programming	12 hours							
Multithread	ed Programming: Creating Threads – Extending the Thread class –	Stopping and							
Blocking a T	'hread - Life cycle of a Thread – Using Thread methods – Thread	Exceptions –							
Thread Prior	rity – Synchronization – Implementing the Runnable interface. Mai	naging Errors							
and Exception	ons: Types of Errors – Exceptions – Syntax of Exception Handling	Code –							
Multiple Cat	ch Statements – Using Finally Statement – Throwing Our Own Exc	ceptions.							
Applet Prog	ramming: Difference Between Applets and Applications – Write	Applets -							
Building Ap	plet code - Applet life cycle - Creating an Executable Applet – De	signing a web							
page – Addir	ng Applet to HTML File – Running the applet – Applet Tags –Pass	ing							
Parameters	to Applets – Aligning the Display – Displaying Numerical values –	Getting input							
from the use	r.								
Unit : V	File Handling and Graphic Designing	12 hours							
Graphics Pro	ogramming: The Graphics Class - Lines and Rectangles – Circles	and Ellipses –							
Drawing Ar	cs – Drawing polygons – Line Graphs – Using Control Loops i	n Applets –							
Drawing Ba	r Charts. Managingl/O Files in Java: Concept of stream – Stream	classes – Byte							
stream class	es – Character stream classes – Using stream – Using the file class	s – Creation of							
Files – Read	ing/Writing characters – Reading/Writing Bytes – Handling Primi	tive Data							
types – Conc	atenating and buffering Bytes - Random access files.	60 <b>1</b>							
	Total Lecture hours	60 hours							
TEXT BOO	JKS								
1	<i>E. Balagurusamy</i> , "Programming with Java," 4th Edition, Tata McGr Publication, New Delhi, 2009.	aw Hill							
REFERENC	CE BOOKS								
1	Herbert Schild, "Java: The Complete Reference," Ninth Edition, Oracle	e Press, 2014							
2	RohitKhurana, "Programming with JAVA", VIKAS Publications, 201	4							
3	Gokila, "Advanced Java Programming", Vijay Nicole Publications, 20	)14.							
4	<i>Muthu C</i> , "Essentials of Java Programming", 2nd reprint, Vijay Nico Publications, 2014.	le							

5	Muthu C, "Programming with Java", 2nd Edition, Vijay Nicole Publications, 2014						
WEB REF	ERENCES						
1	https://www.google.com/amp/s/data-flair.training/blogs/java-tutorials- home/%3famp						
2	https://www.geeksforgeeks.org/java/						
3	https://www.programiz.com/java-programming						
4	https://www.tutorialspoint.com/java/index.htm						
5	https://www.javatpoint.com/java-tutorial						
ASSIGNM	<b>MENTS</b>						
1	Collection Objects						
2	Multi Threading and Array						
3	Applets and Graphics Components						
Course De	Course Designed By						
Mr. V.Vincent Arokiam Arul Raia							

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	L	Μ	L	Μ	Μ	Μ	L	Μ	L	Μ
CO2	Μ	Μ	L	Μ	Μ	Μ	L	Μ	L	Μ
CO3	Μ	S	Μ	Μ	S	S	S	S	Μ	S
CO4	S	S	Μ	Μ	S	S	S	S	Μ	S
CO5	S	S	Μ	Μ	S	S	S	S	Μ	S

S - Strong	M- Medium	L- Low
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		SEMESTER - VI									
Course Cod	e 22UCS10	COMPUTER NETWORKS	L	Т	Р	С					
Core/Electiv	ve/Supportive	CORE COURSE - X	5	0	0	5					
Pre-requisit	e	Basic Knowledge on Networking Concepts and Technologies	Aca	ıden 2022	nic Y -202	'ear 3					
Course Obj	ectives:	<u> </u>									
To lea	rn the Organiza	ation of Computer Networks.									
• To Un	derstand the di	fferent Network Connections.									
• To Un	derstand the pe	erformance of Network Layers.									
• Identi	fy the way prot	ocols currently use in the Internet.									
To acc	• To acquire knowledge about WWW and Electronic Mail.										
Expected Co	ourse Outcome	S:									
On the succe	essful completion	on of the course, student will be able to:									
CO1 Un	derstand the da	ata Communication system and its Components	K1	/K2							
CO2 Ap	CO2 Apply the concept of Error Detection and Correction Codes										
CO3 Illu	strate the impo	ortance of Network Lavers.	К2	/K3							
CO4 An	alyze the differ	ent types of Protocols and their functions within	K3	/K4							
CO5 To	CO5 To interpret the concepts of WWW & Network Security										
K1 - Rem	ember; <b>K2</b> - Un	derstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate;	K6	<u>-</u> Cr	eate						
Unit: I		Overview		12 h	ours	,					
Introduction Protocols an Guided Med	n : Data Comm nd standards - lia an Unguide	unications – Networks – Brief History and the In The OSI Model - Multiplexing – Transmission M d Media.	tern Iedia	et – a –							
Unit: II		Data Link Layer		12 h	ours						
Error Detec Checksum. HDLC – Poir	tion and Error Data Link Con It-To-Point Pro	Correction : Introduction - Block Coding – Cyclic ( trol - Framing – Flow and error Control – Pro tocol.	Lode toco	es – els –							
Unit: III		Network Layer		12 h	ours	1					
Logical Add	ressing : IPv4	Addresses – IPv6 Addresses – Internet Protocol	l : I	nter							
networking Multicast Re	– IPv4 – IPv6 Juting Protocol	- Delivery - Forwarding - Unicast Routing Proto	ocol	s –							
Unit: IV		Transport Laver		12 h	ours						
Process – T	o – Process D	elivery – UDP – TCP – SCTP – Data Traffic –	Con	gest	ion	-					
Congestion	Control – Quali	ty of Service.		-							
Unit: V		Application Layer & Security		12 h	ours	ı					
Name Space	– Domain Nar	me Space – Electronic Mail – FTP – WWW and I	HTT	P –							
Symmetric k	ey Cryptograph	iy – asymmetric key Cryptography – Digital Signat	ure	:0 h.							
TEXT BOO	KS	Total Lecture hours	C	o ne	Jurs						
1.	Behrouz A Fo McGrawHill,	<i>prouzan</i> , "Data Communications and Networking", Fifth Edition, 2013.	Tata	1							
Reference B	ooks										
1	Andrew S. T	anenbaum, "Computer Networks", 4th edition, PHI									
2	AchyutGodb	ole, "Data Communication and Networks", 2007, T	MH.								
3	<i>Uyless Black</i> Interfaces",	<i>k</i> , "Computer Networks: Protocols, Standards, , 2nd ed, PHI	anc	l							

WEB REFERENCES								
1	http://nptel.ac.in/courses/106105081/							
2	https://www.tutorialspoint.com/data_communication_computer_network/							
3	http://www.sanfoundry.com/computer-networks-question-answers-basics/							
4	http://highered.mheducation.com/sites/0072967757/student_view0/index.html							
5	http://www.careerride.com/networking-test-quiz.aspx							
ASSIGNMEN	ASSIGNMENTS							
1	Layers in the OSI model							
2	Error detection and correction methods							
3	Unicast and multicast routing protocols							
4	Congestion Control And QoS							
5	Security in the Internet: IPSec, , PGP, VPN, and Firewalls							
Course Designed By								
Dr. M.Malathi								

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	Μ	Μ	L	L	L	S	L	Μ	L	L
CO2	S	S	L	L	Μ	S	L	L	Μ	L
CO3	Μ	Μ	L	L	Μ	S	L	Μ	L	Μ
CO4	S	Μ	L	Μ	L	S	Μ	Μ	L	L
CO5	S	Μ	L	Μ	L	S	S	S	L	Μ

S - Strong M- Medium L- Low

	SEMESTER - VI									
Course	Code	22UCSM5	INFORMATION SECURITY	L	Т	Р	C			
Core/El	ective	/Supportive	MAJOR BASED ELECTIVE - V	5	0	0	4			
Pre-requ	aisite		Understand basic security threat to Information	Aca	den 2022	nic Y -202	ear 3			
Course	Objec	tives:								
To introduce the importance of Information Security.										
• To inculcate Legal and ethical issues of Information Security										
• To	classi	fy various Se	curity Technologies to protect Information again	st thre	ats					
• To	moti	wate the Syste	amatic Project Management principles to ensur		rity	in				
or	aniza	vate the syste	ematic ribject Management principles to ensur		iiity	111				
	gamza	n ao tho atu do	ntain communication tochnical and problem col	luinge	ابنالم					
• 10			ints in communication, technicar and problem so	vings	KIIIS	•				
Expected	d Cou	rse Outcome	s:							
On the s	uccess	sful completio	on of the course, student will be able to:							
C01	Unde deter	rstand the mine the solu	common threats against Information and ations in the form of security.	K1/K	2/K	4				
CO2	Ident	ify and under	rstand risk and potential security issues	K1/K	2/K	3/K	5			
CO3	Form issue	ulate informa s	ation security and related legal and regulatory	K1/K	2/K	4				
CO.4	Construct Intrusion detection and Prevention systems and have									
C04	an ex	pertise to use	e other security tools.	К5						
C05	ation technology project management	K2 /K4 / K5								
005	syste	ms.		K2/K		<u> </u>				
K1 - F	Remer	nber; <b>K2</b> - Un	derstand; K3 - Apply; K4 - Analyze; K5 - Evalua	te; <b>K6</b>	– Cr	eate	<u>!</u>			
Unit	: I		Information Security		12 h	ours	6			
Introduc	tion- '	The history of	of Information Security - What is Security? - C	ompo	nent	s of	an			
Informat	tion Sy	/stem- The Sy	ystems development Lifecycle. The Need for S	ecuri	ty:					
minouuc	1011 -		thical and Professional Ethics in Information		10 h	01110				
Unit:	II	Legal, E	Security		12 11	ours	,			
Introduc	tion -	Law and Eth	ics in Information Security-International Laws	and L	ocal	Bod	ies-			
Ethics an	nd Info	ormation Sec	urity-Codes of Ethics at Professional Organization	ons. P	lanr	ing	for			
Security	: Intr	oduction - Int	formation Security Policy, Standards and Practic	ces - S	ecur	ity				
Educatio	n Trai	ning and Awa	areness Program.							
Unit:	III		Risk Management		12 h	ours	6			
Introduc	tion -	An overview	of Risk Management - Risk Identification - Risk	Assess	mer	nt - F	Risk			
Control.	Securi	ity Technolog	gy: Firewalls and VPNs: Introduction - Access C	ontrol	- Fii	ewa	alls-			
Protectin	ng Ren	note connecti	ons.	<u> </u>						
Unit: IV Systems and other security Tools						ours	6			
Introduc	tion:	Intrusion De	tection and Prevention Systems - Honeypots	. Hon	evn	ets a	and			
padded o	cell sys	stems. Crypto	graphy: Introduction-Cipher methods - Cryptog	raphic	too	ls.				
Unit: V Implementing Information Security 12 hours										
Introduc	tion -	Information s	ecurity project management- Technical aspects of	of Impl	eme	ntat	ion			
- Non-Te	chnica	al aspects of I	mplementation. Information Security Maintenar	ice: In	trod	ucti	on -			
Digital F	orensi	CS.								
Total Lecture hours 60 hours										

TEXT BOOK	S									
1	Michael E.Whitman and Herbert J.Mattord . 2014. Principles of Information									
1.	Security. [Fifth Edition] Cengage Learning India Private Limited, Delhi.									
Reference Books										
1	Calabrese. 2006. Information Security Intelligence: Cryptographic Principles									
1	and Applications. [India Edition]. Thomson Delmar Learning Publications.									
2	Bhaskar, S.M. and Ahson. S.I. 2008. Information Security - A Practical									
2	Approach. Narosa Publishing House, New Delhi.									
WEB REFERE	ENCES									
1	www.sans.org/security-resources									
2	www.securityforum.com									
3	www.cte.unt.edu/information-technology									
ASSIGNMEN	NTS									
1	Detailed Survey on Major security threats against Information and its									
1	consequences.									
2	Plan for security by Industries and Institutions.									
<b>Course Desig</b>	ned By									
Mr. M.Thanga	avel									

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	Μ	Μ	Μ	S	Μ	Μ	Μ	Μ	S	Μ
CO2	Μ	S	Μ	S	Μ	Μ	L	Μ	Μ	L
CO3	Μ	Μ	L	Μ	Μ	L	Μ	Μ	Μ	Μ
CO4	Μ	S	L	S	Μ	S	Μ	L	Μ	Μ
CO5	Μ	М	Μ	Μ	Μ	S	L	Μ	S	Μ

S - Strong M- Medium L- Low

		SEMESTER - VI						
Course Code	22UCSM6	E-COMMERCE	L	С				
Core/Elective/Su	<del>pportive</del>	MAJOR BASED ELECTIVE - VI	5	0 0 4				
Pre-requisite	Pre-requisite Web Development Academic Year 2022-2023							
Course Objective	es:							
<ul> <li>Discuss fundamentals of e-commerce, types, and applications.</li> <li>To evaluate the role of the major types of business models based on the Relationship of Transaction Parties.</li> <li>Assess the impact of the internet and internet technology on electronic business.</li> <li>To identify the major management challenges building and using electronic payment systems.</li> <li>Learn strategies for e-commerce, Mobile Commerce and Mobile Information devices.</li> </ul>								
On the successful	completion	of the course, student will be able to						
CO1 Understa electronic	nd the basic c commerce.	concepts and technologies used in the field of		K1/K2	2/K4/	′K5		
CO2 Relations	the role of th ship of Trans	e major types of business models based on th action Parties.	e	K2/K	3/K5/	′K6		
CO3 Develop a together of	an understa on e- busines	nding of how various information systems w ss.	vork	K2/K	3/K4			
CO4 Understa systems i	nd the role o n organizatio	f information systems and electronic paymen ons.	t	K2/K	3/K6			
CO5 Learned security is	the need o ssues of info	f Technologies for Mobile Commerce an rmation systems.	d	K2/K	3/K4/	′K5		
K1 - Reme	mber; <b>K2</b> - U	Inderstand; K3 - Apply; K4 - Analyze; K5 - Ev	aluat	e; <b>K6 -</b>	Creat	e		
Unit: I		Introduction to Electronic Commerce			12 ł	nours		
Introduction to Electronic Comme Internet VS Online	E-commerce erce. The Int e Services – I	e :Defining Electronic Commerce – Industry ernet and The Access Provider Industry: Int Predicting the future of the IAP market.	y Fra erne	imewo t Servio	rk – 1 ce Pro	Types of viders –		
Unit: II		World Wide Web Application			12 ł	nours		
World Wide Web the Electronic Cor Architecture.	Applications nmerce – Th	s: Brief History of the web – Why is the web s e web and the Intra-Business Commerce – U	such nders	a Hit? - standin	- the V g the	Veb and Intranet		
Unit: III	Wo	orld Wide Web - Concepts and Technolog	зy		12 ł	nours		
Concepts and T	echnology:	Overview of the Web Technical Archite	ectur	e- Inte	eractiv	ve Web		
Applications – We	eb and Datab	ase Integration – Web Software Developmen	t Too	ols – Mı	ıltime	dia Web		
Extensions.								
Unit: IV		E- Payment Systems			12 ł	nours		
Electronic Payme	nt System: C	Iverview of the electronic Payment Technolo	ogy –	Electro	onic o	r Digital		
Unit: V		Commerce and Banking			12 ł	01115		
Electronic Comm	erce and B	anking: Changing Dynamics in Banking In	dusti	ry – H	ome	Banking		
Implementations Retailing: Changin	Approaches	– Management Issues in Online Banking. E ustry Dynamics – Online retailing Success Sto	Electr ories.	onic C	omme	erce and		
		Total Lecture hours	5		60 ł	nours		

TEXT BO	OKS							
1	Ravi Kalakota and Andrew B. Whinston, "Electronic Commerce- A Managers Guide",							
1	Pearson Education Sales Division							
REFEREN	ICE BOOKS							
1	<i>David Whiteley</i> , "E-Commerce Strategy, Technologies and Applications", 1st Edition, Tata Mc- Graw-Hill, 2001.							
2	<b>Kamalesh K Bajaj and Debjani Nag</b> , "E-Commerce - The cutting edge of Business", 2nd Edition, Tata McGraw-Hill Education, 2005.							
3	<i>Alexis Leon and Mathews Leon,</i> "Internet for Everyone", 15th Anniversary Edition, Leon Tech world, UBS Publications, 2012.							
4	RitendraGoel, "e-commerce", New Age International Publishers, 2016.							
WEB REF	ERENCES							
1	https://www.w3schools.com							
2	https://tutorialspoint.com/e-commerce							
3	https:// www.studocu.com/in/documents							
ASSIGN	MENTS							
1	Emergence of the Internet and advantages of E-Commerce.							
2	Traditional Marketing, Online Marketing, E-advertising and E branding.							
3	Digital Payment Requirements , Classification of New Payment Systems and Properties of Electronic Cash							
Course D	esigned By							
Dr.D.Chi	tra							

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	L	Μ	L	Μ	S	L	М	S	Μ	М
CO2	L	Μ	S	Μ	S	L	М	S	Μ	М
CO3	L	S	Μ	Μ	S	L	S	S	S	М
CO4	L	S	S	Μ	S	L	S	S	S	М
C05	L	S	S	Μ	S	L	S	S	S	М

<b>S</b> -	Strong	M-	Medium	L- Low
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SEMESTER - VI													
Course Code     22UCSP6     JAVA PROGRAMMING     L     T													
Core/ <del>El</del>	ective/Supportive	CORE PRACTICAL - VI	0	0	3	3							
Pre-requ	uisite	knowledge of computing fundamentals and programming	Aca	aden 2022	nic Y -202	'ear 3							
Course	Course Objectives:												
• T	• To use an appropriate programming environment to code, compile, run and debug												
JA	AVA.												
• T	• 10 practice programming in Java												
• T	To understand the principles and concepts of object oriented programming												
• T	o analyzing probler	ns, modeling a problem as a system of objects us	ing	JAVA	1								
• T	'o create simple web	applications											
• T	'o learn GUI Applica	ation development in JAVA.											
• T	his course gives the	e practical training in JAVA programming.											
• T	'he competence and	the development of small to medium sized applie	catio	n									
р	rograms that demo	nstrate professionally acceptable coding											
Expecte	d Course Outcomes	3:											
On the s	uccessful completio	n of the course, student will be able to:											
	Understand the fur	ndamentals of Java programming. Choose the r	ight										
	data representatio	n formats based on the requirements of	the										
CO1	problem.Apply the s	specification of syntax rules for numerical const	al constants K2/K3										
é	and variables simil	arly other data types. Ability to work with tex	tual										
	information, charact	ters and strings.	1										
	Design and develop	Java program to evaluate simple expressions	and Iawa										
CO2	nrograms lise the	comparisons and limitations of the var	java ious	К2	K5/K3/I	/K4							
	programming const	ructs and choose the right one for the task in ha	and.	112	, 110 ,								
ļ	Improve the ability (	to use conditional statements and loops structure	s.										
4	Ability to work wit	h arrays of complex objects. Develop & Implen	nent										
	Java programs wit	h suitable modules to solve the given prob	lem.										
CO3	Identify the usage o	f arrays, strings, functions, etc. Improve the abilit	ty to	К2	/K3	/K4							
	develop function-or	riented programs. Along with understanding of	the	/	, ,								
	code with functions	so that they can be reused	e										
	Implement differe	nt Operations on collection objects Analyze	the										
	features of collect	ion objects in custom programming. Evaluate	the										
CO4	importance of we	b application using Java – AWT compone	ents.	K2	/K3/	/K4							
	Improve my under	rstanding of the use of server and client side											
	programming also	has improve the ability to use the dynamic memo	ry.										
	Learn to create sim	ple web applications in JAVA. Also get knowledg	e of										
	using GUI Applicat	ion development in JAVA. Emphasis the ability	y to										
	Impose their graphi	cs knowledge by learning various graphic contro	is in										
CO5	reader and writer	Import the importance of reading and writing f	rom	K2	/K3,	/K5							
	sequential and rar	ndom files in JAVA. Understand the fundame	ntal										
	concepts of AWT co	ontrols, layouts and events. Develop java progra	ams										
1	for applets and grap	hics programming											
K1 - I	Remember; <b>K2</b> - Un	derstand; K3 - Apply; K4 - Analyze; K5 - Evaluate	e; <b>K</b>	5 – C	reate	9							

Practical 1&2	Java Construct and Malleable of operators on variable	6 hours								
1. Finding area and Perimeter of a circle. Use Scanner class.										
2. Determining the	e order of numbers generated randomly using Random Class.									
Practical 3,4&5	Branching and Looping	6 hours								
3. Write a java program to check vowel or consonant										
4. Write a Java pro	4. Write a Java program to calculate HCF of Two given numbers using loop									
5. Write a java pro	gram to count total number of notes in entered amount using loc	р								
Practical 6,7&8	Illustrate the use of inheritance and interfaces while creating class	6 hours								
6. Write a Java for	the implementation of Multiple inheritance using interfaces to ca	lculate the								
area of a rectan	gle and triangle.									
7. Write java progr	rams that implement the following a) default constructor b) para	meterized								
constructor c) co	onstructor overloading									
8. Write a java pr	ogram that computes the area of a circle, rectangle and a Cyli	nder using								
function overloa	ading.									
Practical 9	Epitomize the use of multithreading and Exception handling	6 hours								
9. Write a Java pro	gram using Synchronized Threads, which demonstrates Produce	er								
Consumer conce	ept.									
Practical 10,11&12	File Handling and Graphic Designing	6 hours								
10. Write a java pr	ogram to display the following graphics in an applet window.									
a. Rectangles b	. Circles c. Ellipses d. Arcs e. Polygon									
11. Write a java pr	ogram to create following AWT components: Button, Text files ,	Checkbox,								
Choice, and Lis	st using containers and layouts.									
12. Write java pr	ogram using AWT component to implement Dialog Box and	Menus to								
working with (	working with Colors and Fonts.									
	Total Practical hours 30 hours									
Course Designed By										
N.C. XXXXI . A										

Mr. V.Vincent Arokiam Arul Raja

COs/ PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	L	L	L	Μ	Μ	Μ	L	Μ	L	Μ
CO2	L	L	L	Μ	Μ	Μ	L	Μ	L	Μ
CO3	Μ	Μ	Μ	S	S	S	S	S	Μ	S
CO4	Μ	Μ	Μ	S	S	S	S	S	Μ	S
CO5	Μ	S	Μ	S	S	S	S	S	Μ	S

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}\, {\rm Medium}\,$   $\,{\bf L}\text{-}\, {\rm Low}\,$ 

SEMESTER - VI											
Course Code	22UCSPR	COMPREHENSIVE PROJECT	L	Т	Р	C					
Core/Elective/Supportive		CORE PROJECT	5	0	0	4					

This paper is introduced in the curriculum with the motive of imparting practical knowledge in the phases of Software Development and Engineering. Hence, the Faculty in-charge for this practical continuously assesses the development process of the software developed by each student.

In the semester examinations, the External and Internal Examiners would assess the quality of the software with various parameters like Problem definition, Form design, Table design, Validation etc..,

			SEMESTER - VI						
Course Co	ode	22UCSS4	ANDROID PROGRAMMING	L	Т	Р	С		
Core/Elect	<del>ive</del> /S	upportive	Skill Enhancement Course - IV	0	0	2	2		
Pre-requi	Pre-requisite     Knowledge on Mobile Apps     Aca								
Course Objectives:									
To Install and configure Android application development tools.									
<ul> <li>To Design and develop user Interfaces for the Android platform.</li> <li>To Save state information across important operating system events.</li> </ul>									
To Sav     To App	ply Ja	va programmi	ng concepts to Android application developme	ent.					
Expected (	Cours	e Outcomes:							
On the suc	cessfi	ul completion o	of the course, student will be able to:						
CO1	Crea	te the App to d	lisplay the messages .		K2/	′K3/I	۲4		
CO2	Crea prog	te the App and ramming.	manipulate the table of information		K2/	′K3/I	٢6		
CO3	Crea	te the App for	receiving and displaying the volume of inputs		K2/	′K3/H	٢5		
CO4	Crea	te the App for	converting all type of currency.		K2/K3/K4				
CO5 Create menu based App's.						′K2/ł	٢6		
<b>K1</b> - R	emen	nber; <b>K2</b> - Und	erstand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evalua	te; K	6 – C	reate			
Practical	1		Display the Message			3 ho	ours		
Creati	ing an	App to displa	y the text "Hello World".						
Practical	12		Display the Table			3 ho	ours		
Creati	ing an	App to create	and display a table of information.						
Practical	l <b>3</b>		Receive and Display the Inputs		3	hour	'S		
Creati	ng an	App to receiv	e student details as input and display it.						
Practical	4		Creating Converters		3	hour	'S		
Creati	ing a l	Simple Curren	cy Converter App.		1				
Practical	l 5		Login Process		4	hour	'S		
Creati with s	ing an succes	App to demonstrates message).	nstrate Login process (On success it should ope	en a 1	new p	oage			
Practical 6 Menu based						hour	'S		
Creat	ing a	menu based aj	op.						
	Total Practical hours 20 hours								
Course De	esigne	ed By							
Dr. R.Puga	izend	i							

COs/PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
C01	S	L	L	S	Μ	L	L	Μ	L	L
CO2	S	L	L	Μ	Μ	L	L	Μ	L	L
CO3	S	Μ	L	Μ	Μ	L	L	Μ	L	L
CO4	S	Μ	L	Μ	Μ	L	L	Μ	L	L
CO5	S	Μ	L	Μ	Μ	L	L	Μ	L	L

#### MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

 ${\bf S}$  - Strong  $\,{\bf M}\text{-}\, {\rm Medium}\,$   $\,{\bf L}\text{-}\, {\rm Low}\,$