FATIMA COLLEGE (AUTONOMOUS)



Re-Accredited with "A" Grade by NAAC (3rd Cycle) 74th Rank in India Ranking 2021 (NIRF) by MHRD Maryland, Madurai- 625 018, Tamil Nadu, India

NAME OF THE DEPARTMENT: COMPUTER APPLICATIONS

NAME OF THE PROGRAMME: B.C.A

PROGRAMME CODE : USCA

ACADEMIC YEAR : 2023 - 2024

FATIMA COLLEGE CAUTONOMOUS), FLADORAI - 626018 THE MINUTES OF THE BOARD OF STUDIES DEPARTMENT OF COMPUTER APPLICATIONS LEGIL POLICE TO BE IMPLEMENTED FROM 2023-2024 ONWARDS The board of Studies meet for Framing the Syllabus for Dopardment of Computer Applications [BCA & PGIDCA] was held on 03.04.2023 at 1000.Am. The members of the board were, UNIVERSITY NOMINEE CBCAD: Dr. K. SUNDARAVADIVELU, ASSISTANT PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE, MADURAL KAMARAT UNIVERSITY, MADURAL. UNIVERSITY NOMINEE CPGDCAD: DY. R. RATHINASABAPATHY, ASSOCIATIE PROFESSOR, DEPARTMENT OF COMPOTER APPLICATION SCHOOL OF INFORMATION TECHNOLOGY, MADURAL KAMARAJ UNIVERSITY

8107	SUBJECT EXPERT:
a and a second	
99 1	Dr. M. PUSHPARANI,
2.03	PROFESSOR & HEAD,
	DEPARTMENT OF COMPUTER SCIENCE, 3/4/
	MOTHER TERESA UNIVERSITY,
	RESEARCH EXTENSION CENTRE,
5271	10 COSMADORAL CO SIGN
	SUBJECT FERT : 10 ACCOMMENT OF
	Mr. V. NEETHIDEVAN
- Annahi	ASSISTANT PROFESSOR, 4. NAW 342
3	DEPARTMENT OF MCA, VISACIALE
	MEPCO ENGINEERING COLLEGE,
	DEPRENTENT OF COMPOSER SEIZARAIS
	THOUSTRIALIST:
	INDUSTRIALIST:
	Dr. S. BALANURUGIAN
	MANAGINION DIRECTOR,
	ESHA TECHNOLOGIES
	MADURAL.
	DEPARTMENT OF COMPOSE BEPLICONS
	ALUMNIA: YEAR DOLLAND TECHNOLOGY : AINBULLE
	Marines Kanasan Onmercial
	Mr. A. DIVYASRI,
	SOFTWARE DEVELOPER, A.D.
	BRICKSTEEL TECHNOLOGIES PUT LTD, 3.4.
	MADURAI-16

STAFF	MERRICO
	MEMBERS:
+ 13	M- 9 0
	Ms. S. SELVARANI,
	THE PROPERTY OF THE PROPERTY O
+	OF COMPUTER APPLICATIONS
	COLLEGIE AND
	MADURAI - 18
	Ms. RAMYA, R,
Alexander 5	ASSISTANT PROFESSOR, 2 14/2
	DEPARTMENT OF COMPUTER APPLICATIONS
	FANIMA COLLEGE,
Will want	MADURAL - 18 of the moment of
	who sent trades no bosso it is how no do and 100
A LANGERY	\sim
	ASSISTANT PROFESSOR,
	DEPARTMENT OF COMPUTER APPLICATIONS
THE STATE OF THE S	FATIMA COLLEGE,
	MADURAI - 18
	The same some some some of the same is a could be sent in the
	Ms. K.P. MAHESWARI,
	ASSISTANT PROFESSOR,
	DEPARTMENT OF COMPUTER APPLICATIONS, APPLICATIONS
	CATISIA COLLEGIE,
	MADURAI - 19
The same	The second second to the second secon
	Ms. P. RENGIANAYAGA
	ACCUSTANT PROFESSOR,
The second	DEPARTMENT OF COMPUTER APPLICATIONS,
	FAZINA COLLEGIE!
	19ADURA1 - 18,

	DEAN OF ACADEMIC AFFAIRS:
K. Laka and A. S. Changara Salahan H. J. K. Laka Salah S	Dr. K. SANGEETHA, Byut
	ASSISTANT PROFESSOR,
	DEAN OF ACADEMIC AFFAIRS,
	FATIMA COLLEGIE,
	MADURAL -18
	Many Rh
	In the beginning of the meeting the Head of the
	In the beginning of the meeting the Head of the Deportment Ms. s. Selvarani welcomed all the members
	of the board and briefed them about the current
Consider territorios establismos de la consideración de processor de la consideración	underlying and progress of the department.
	The members of the board expressed their high
	appreciation and satisfaction about the deportment.
	XXX - NERGENTERSHIPPETO A GENERAL TO SEE
	E A RIVERON ROZZ-2004 FURTHERS
	2 horrestiggs sarrando do thameras of
	THE CHILD TO THE TOURS OF THE
	Et - LOGUEZ PA
	The C Responsibles
	MANUSCOLO PRINCIPARIO CONTRA
	Francisco Parameter Constitution of the Consti
11/2	15 - Annatary (1986 - Annatary 1996 - Annatary 1996)
and an executive and the second control of the second seco	
A comment of the state of the s	
nganggagga ka mi Sakangganah samon dipungsahi pangan pangan pangan pangan pangan pangan pangan pangan pangan p	
Control of the Contro	

Action Taken Report for 2022-2023

3.	COMMON SUGIGIESTIONS OFFERED	3 1 2 2 7 7 11 7
	IN THE PREVIOUS BOARD	ACTION TAKEN FOR THE
NO.	THE PREVIOUS BOARD	ACADEMIC YEAR 2021-2022
NO.	d - 1	
1	The Mon-Mojor Elective courses,	To develop animation techniques
44	21JINME and 21J2NKIE - Animation	and create motion movies
Joseph	Took and Techniques was introduced	using Alice.
Bank	for other major students.	Mark Mark College
	R-Sled?	64-33-
2.	The Gelf Learning cowne 2172511-	To develop animation techniques
16	Open Source Animation Took	and create motion movies
	was introduced for the birst-	using Alice.
	year BCA students	O Control of the cont
	in the trade	diameter Programmin
3.	The Self Leating course 2134513192	To create appropriate content
	Content Writing and Video Making	
	was introduced for the second-	
	year Bon and Imc students.	
W	hadanya kirokaka ana ise	Constanting TABLET TO
4.	The Self Lewining course 2136546	To know about R'Language
	Data Science was introduced for	that is widely used to do
	the final-year BCA and IT	analysis and focus on
	students.	respond
	when ma	Town-3 Sproof 4
40	For Diplor	na mot and
5.	The lab course 21PDB106 - Design	
	Jechniques was introduced.	and to improve employability
		skilh.
		1 33 Tay CC 8 Web Designing
6.	The course 21PDB202 - Python	To gain knowledge in python
	Programming was introduced.	programming and do create
	Secretary of the second of the	real time applications.
*		

Minute	of The	Board of	Studies
Distinguish on			

 			Secretary of the ready from	and the second second second			and grant was the same of the		sentanio rivri	and the second s		
	3 47 (No. 2 15 5)	CORE COUR	CORE COURSES INTRODUCED (PART-11)									
So	The state of the s	Course Title	R	elevo	no.	Ъ	Q COUP			Need for		
No.		1	L	R	N	G	Emp	Ent	Se	Introduction		
1.0	2371661	Object Oriented	-1 p. may	(ner si		k	#		#	All courses		
		Programming Concepts Him	wh's	rini						cole infroduct		
		Concepts using								as per the TANSCHE		
2.	2771002	CH D		15	JAIT.	P. 73			<u> </u>	syllabus		
	Die Hen	CHA Programming		modili vida	and the	*	#		#			
3.	2331cc3	Python				*	#			To gain		
Instr	ar stragary	Programming	100	be rec		- 12 Y				Knowledge		
43	2372004	Python stides so	i.Xs.	109	5N	*		#-		in Realtime		
1	tilide outs	Programming (Pr)		no sá		ėt,			The second second	of python		
5.	2373cc5		and the state of t			×			#	- Complete and Com		
TQ.	mit D Lan	Systems	16.8		AT.	0.0	501		Control States			
6.	23J3cc6	Relational			be a v	·k)	#	in the		To gain		
		DadaBase			Control of	and the state of t	appropries planting and appropries			knowledge		
		Management System CPr)	N Yang			ori fisacijis Bijbarolo			- 1	on online		
en i	pjoh m I	of So get skil			015	0.91			- 8	Query exe		
3.	2374667	Data Structures			031	*	#	30 3	#	plotes?		
8.	2374008	Web Designing (R)	16.00			*	#					
9.	2375009	Java Programming		100		X	#			5 - 6-4		
	. Annihamile	anit how								o meet the urrent		
						2010	20,73%			rends		

10.	2335	CCIO	Javo	C. Andrews	12			*			#		
1			R	gramming (Pr)	Standard Section		ine						
	2375	CCII	-	dwarte_						_11			
					Township to the second		r Lie	x		#-	1	To create	1/4
		Action to the second se		gincering			سللما	177	1-14		RLS.	dynamic	
12.	237	CC12	D	eject with	-			051	11_	-	4	projects w	and participate to the other
				lya Yoce			11/11/	_k_	#	-	4	Applications	ery pionessian april 1971 (In-second)
			71 1 17 20	NA VOCE						1204			et andere er seheetis vir torro
13.	2306	ccl3	RI	Programming		Billing	nd Co		#		#=		
	MARINA	the To know		g	- /			*		10.71	C	To Know abo	
14	2336	CC)4	RF	rogramming				J.	#		#	-ut R-Libra ries and	
	1	10 m	5	V / I		V	Line	h/A	4	133		implement in	
, Sta	and sea					cosina	MAY!	1.07				projects	
15.	230	6 ccis	Com	puter Network		Your) Park	*A		#			
-	12	-											
	V			A State of the Sta		and which the property and the property	ARL	500					
		o T		***			a BL					Santar ACL	1
		ST.		* *	æΦυ	CEJ	Oato Co	Pal	27-	(ווּ) DES	ontario	1
-		TIVE	Coni	RSES INTRO	D U Rel	evan	ce	PAI	ر 1 ا	(II)	or	Head for	
8.	ELEC	COUST	COU	RSES INTRO	D U Rel	evan	ce	PAI	ر 1 ا	(II)	or	Head for	
8.	ELEC	Coust Cod	COU	RSES INTRO	D U Rel	CEI evan	ce	PAI	ر 1 ا	(II)	or		
8.	ELEC Genevic Disciplina Specific	Coust	COUL	RSES INTRO Cowhe Title	D U Rel	evan	ce	Pa Fo	ر 1 ا	(II)	or S D	Head for Introduction	
8.	ELEC Genevic Disciplina Specific	Coust	COUL	RSES INTRO	D U Rel	evan	Ce T	Pa Fo	Sc.	(II)	or S D	Head for Introduction To meet	
8.	ELEC Genevic Disciplina Specific	Coust	COUL	RSES INTRO COWLE Title Programming	D U Rel	R	Ce T	Pa Fo	Sc.	(II)	or S D	Head for Introduction	
8.	ELEC Genevic Disciplina Specific Genevic	Coust Cod	COUL	RSES INTRO COWLE Title Programming	D U Rel	R	Ce T	Pa Fo	Sc.	(II) place ## len ten	or SD	Head for Introduction To meet the future trends of	8
8.	ELEC Genevic Disciplina Specific Genevic	Coust Cod	COUL	RSES INTRO COWLE Title Programming in C	D U Rel	R	Ce T	Pa G	Em P	(II) place ## len ten	or SD	Head for Introduction To meet the future	8
8.	ELEC Genevic Disciplina Specific Genevic	Coust Cod	COUL	SES INTRO Cowhe Title Programming in C Object Oriented Programming	D U Rel	R	Ce T	Pa G	Em P	(II) place ## len ten	or SD	Head for Introduction To meet the future trends of object	8
8.	ELEC Genevic Disciplina Specific Genevic	Coust Cod	COUL	RSES INTRO Cowhe Title Programming in C Object Oriented	D U Rel	R	Ce T	Pa G	Em P	(II) place ## len ten	or SD	Head for Introduction To meet the future trends of object oriented	8
8.	El Ec Gierevic Disciplina Specific Generic Generic	Court Cod	COUL Se ECIGI	Cowhe Cowhe Title Programming in C Object Oriented Programming in C+1	AD U Rel	R	Ce T	Pa G	Em P	(II) place ## len ten	or SD	Head for Introduction To meet the future trends of object oriented	8
8. No. 1.	El Ec Gierevic Disciplina Specific Generic Generic	Court Cod	COUL Se ECIGI	SES INTRO Cowhe Title Programming in C Object Oriented Programming	AD U Rel	R	Ce T	PA	Em P	II) pre F	or SD	Head for Introduction To meet the future trends of object oriented programming	- 1

TELLETIC	ZZALECHANII	Web P	-		-	*	and the same	#		To get
	Crake		de v	t [4]	1275 (1	r ou serie				awarenegs
		J					W	Parameter Control of C		on Security
Oirci plina	27755001/	Sandita	1	191		×	#		The second second	practices
		A STATE OF THE STA			Ü	l.	#			A CAMPAGE AND A
7.3	1	Data				+	-			
			+		164		10			
	2355EC53		-			*	#			
		Compuding	-					1		
A COMPANY OF				K	imit	eri			502	
			-			K			#	To know
			1		siest	N (A TA)				about the
<u>Lasaskie</u>	23JFE 662/	Android			(A)	k			#	Latest
2435 100		Programming/	1							Framework
231200	2375 FC 63	UAR Framework		John W.	lak.	*	lact.		#	designs
	1 Date	Design								9
Discoline	2376EC71/	Human	The same of the		ralgran	×	#			To incorpo
		Computer	i Chi	59.T		APPL Scott	32.9			-rate AI
	Top specific	Interportion/	DG.			100			hAT I	Erends
dauborto I			1			¥	#			and bools
	CONT. 9									a sipandi
	2271 6073						4	. China		· · · · · · · · · · · · · · · · · · ·
3 3 3 3 3 3	ADJOECTS			0			1			
1		Sinjewing								
	0-06-5-01/	n. e			e e			ш		
1	1 1 2 2					*		JL.		To use
Opecific		Jook			<u>last</u>	NA.				free and
MANDY CHA				15						public
					<u>bu</u>	7	Av I			license
										tools
Shows		3.		Take.	es.A.	<u> 13.</u>		1. A.	-D-52	Yak Lona W
1			-		-0	200				
	Discipline Specific Discipline Specific Discipline Specific	Discipline 2375 Ec51/ Specific 2375 Ec53 Discipline 2375 Ec61/ Specific 2375 Ec62/ 2375 Ec63 Discipline 2376 Ec71/ Specific 2376 Ec72/ 2376 Ec73	Discipline 23J5EC51/ Seculity Specific 23J5EC52/ Practices/ Data Plining/ 23J5EC53 Cloud Computing Discipline 23J5EC61/ Dod Ned Specific Programming/ 23J5EC62/ Android Programming/ 23J5EC63 UAX Framework Design Discipline 23J6EC71/ Human Specific Computer Interaction/ 23J6EC72/ Interned of Things / 23J6EC73 Pobile Computing, Discipline 23J6EE81/ Open Source	Discipline 23J5EC51/ Sewity Specific 23J5EC52/ Practices/ Data Mining/ Computing Discipline 23J5EC61/ Dod Ned Specific Programming/ 23J5E662/ Android Programming/ 23J5E663 UAR Framework Design Discipline 23J6EC71/ Human Specific Computer Trienaction/ Things/ 23J6EC72/ Interned of Things/ 23J6EC73 Mobile Computing Discipline 23J6EE81/ Open Source	Discipline 23J5 Ec51/ Sewlitz Specific 23J5 Ec52/ Practices/ Data Mining/ 23J5 Ec53 Cloud Computing Discipline 23J5 Ec61/ Dod Ned Specific Programming/ 23J5 Ec63 (Android Programming/ 23J5 Ec63 (UAX Pramework Design Discipline 23J6 Ec71/ Human Specific Computer Interaction/ 23J6 Ec72/ Interned of Things/ 23J6 Ec73 Mobile Computing Discipline 23J6 Ec73 (Open Source	Discipline 23.35 EC51/ Secutity Specific 23.35 EC52/ Practices/ Data Mining/ 23.35 EC53 Cloud Computing Discipline 23.35 EC61/ Dod Ned Specific Programming/ 23.35 EC62/ Android Programming/ 23.35 EC63 UAX Framework Design Discipline 23.36 EC71/ Human Specific Computer Tribroadion/ Things/ Things/ 23.36 EC72/ Interned Ob Things/ Computing, Discipline 23.36 EE81/ Open Source Specific Cooks	Discipline 23.75 Ec51/ Security Discipline 23.75 Ec52/ Practices/ Data Hining/ 23.75 Ec53 Cloud Computing Discipline 23.75 Ec61/ Dod Net Specific Programming/ 23.75 Ec62/ Android & Programming/ 23.75 Ec63 OAR Framework Design Discipline 23.76 Ec71/ Human Specific Computer Interaction/ 23.76 Ec72/ Internet of Things/ 23.76 Ec73 Hobile Computing Discipline 23.76 E81/ Open Source & Specific Tooks	Security Discipline 2335EC51/ Secutify Specific 2335EC52/ Practices/ Data K# Mining/ 2335EC53 Cloud Computing Discipline 2335EC61/ Dod Ned Specific Programming/ 2335EC62/ Android Programming/ 2335EC63 (DAX Framework Design Discipline 2336EC71/ Human Specific Computer Trienaction/ 2336EC72/ Interned of things/ Things/ 2336EC73 19obile Computing Discipline 2336EE81/ Open Source Specific Goods	Discipline 23J5Ec51/ Security ## Opecific 23J5Ec52/ Practices/ Data ## Mining/ 23J5Ec53 Cloud Computing Discipline 23J5Ec61/ Dod Ned Specific Programming/ 23J5E662/ Android # Programming/ 23J5E663 UAX Framework Design Discipline 23J6Ec71/ Human ## Specific Compuder Triencedian/ 23J6Ec72/ Interned of Things / 23J6Ec73 Hobile ## Specific Computing Discipline 23J6EC81/ Open Source ### Specific Pools	Discipline 23.35 EC51/ Secutify Opecific 23.35 EC52/ Practices/ Data Hining/ 23.35 EC53 Cloud Computing Discipline 23.35 EC61/ Dod Ned Specific Programming/ 23.35 EC63 Android & # Programming/ 23.35 EC63 UAX Framework Discipline 23.36 EC71/ Human Computer Interaction/ 23.36 EC72/ Internet of Things/ Things/ 23.36 EC73 Hobite Discipline 23.36 EC81/ Open Source Specific Open Source * # Specific Open Source

8	SEC/FC/	Course	ndadion / Ability	\mathcal{R}	elev	ance	B	S	cope	- For	Head for
5.1 15	100	Code	Ditte			k .		_عَل	# Ln	s	Introduction
met VII.	101 1130				K	H	G	7	15	Ð	
1	SEC	23313861	Animation	u le			K		17 7		To learn
			Took And								about
			Techniques Clab								animations
Mei					UIT						
2	o Ferry	2331 FC	Problem	(40	10		火	4.3			To prepare
	ay away ja		Solving	Legislari.			- Drug	4-1			for Competitive
			Using < Clab)	أهياه	300		gà Thá	1.6	408		Exams.
Hue	atom i		Mich there	Wa H	re-str	AI.			7.1		
3.	AECC	23JIAECCI	Non Yorbal	7	Li.		太	-			
a ke	ars Jan		Reasoning								
	and States		O	tris	ldos	9	8.5	32.3	property.		392 1 21
4.	SECULO	2332SEC2	Animation	VI	irla	2	*	1	-		To learn
7.—	6) A	lish	y") y'			- 1		and work
			Technique Chah	1		a de la compa					on frames
											Audio &
-	Osia A	23J28EC3	Animation	10	Ada	0.65	*	10	Tra	iko	video
5,	SEC	A STATE OF THE PROPERTY OF THE	Technique Chah)								processing.
ALTIC	aid.	0.	11112 Agree	.h.	dia	a Con	1		distant.		S Courtee
		Later Country	Verbal	aksid.	PON	0	ĸ	a lea	hi		the Code
6.	AECC	2332 AECC2	1			(Application)		S. 200 - 5	er (6) seption	Secretary and	MA I
			Reasoning			College of College	and a local section of	4/	di-description	the state of the s	
						genadesead	k		Part of the last		To work on
7.	SEC	2373SEC4	Spread	10.	Men	_ 0		P	016		Analysis
TEN-	() amali	adii Seede / Di	Sheet Clab)					and the	J. 550F		1
ALL TO	Disloca	Control of the Contro					*				To create
8.	SEC	2333565	Photo		til		~		14.3		and edit
		Dutcome	Eding "	200	ANF	1					images
			Jechnique Class				\dashv	-	-	7	an agos

-	prepare	To	1500	3/	水	المطا		dA.	Technical	23J3AECC3	AECC	9.0
	th the		3412			(0.0)	N.		Interview	Do Sugar	books or	301
	Llis to		10-1			[]	511	a phone is coming period according	CKIL		- Indra	rollant
- 14	ce interview	fa						-	May all and	Strain Ex		di .
-			z.u.l	150	*	rief	ibas	. AC	E-Condent	23348Ec6	SEC	10.
-				<u> </u>		Mac	1	b	Creation		dinda	
						arbun	ingsi	. دا	1 1 1 1 1		amien	Spring
	get about	To		and a	*				Linux	23345567	SEC	11,
	en Source	OP	19 1			Jan S	ام ص		CLab)		To pres	5500
	ftware	-	- Constitution			Jak	eni				voi voi	uBELon
		7 7.			*	eris!	5 4	0	Non-Technica	23J4AECC4	ALCC	12.
	train the	To							Interview		Seader	
	udents	SŁ	AE	155	N. H.	60]	of too V	11s	okills.	STORE CEA		
	d create	an	*			وديا	ein		Thospiania			
	moblem				*		V		Problem	23J6SEC8	SEC	13.
	plying	1	12.5	50		eniet (pila	T C	Solving	*	70 80	_0.50
	wareness	1	Section of the sectio		5	مُولِدًا	À	1	Skills	200 62-11/	S. Andrew	AT N
1					h	irebs	No.	J,	Commercial		de no	Attent
									The solim !		dibus	72
-	/ Advanced	ploma	/Di	ute.	lific	Col	ail-	NWO	lue-Addad Co	dion of Va	Indroduc	1.7
	Diploma				n:	Sont	Laur	la la	Thins 16		12.11-19	001
=		e	own			kil/	ی	44 /	lov with Indust	Cowhe M	Cowhe	S.
	6 ABEE	ome	2	9-		har		•	Organisatio	Title 1	Code	No.
					4	1.00	Mino				NIL	
							1	de la company	A STATE OF THE STA			7
	W Mexico	11				e veri	6		The state of the s		refer to the first	
md	· / / / /	da la	I C:	ond !	11	الماء	mh	la k	Durely Skill	luction of	Indro	2
_	V 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(K. I. I)	TICA	W 1.7		.MU (7 0211		V	1
=	Diploma Cows				LED.	اراءا	1	1	1900 with Ind	Cowna 1	Cowne	C
		one?				Skil eh -			Organisasi'	Title		No.
		come	UM		•	sho	10	on_	- Omisee	Tide		740.
_		-			SIL	lich	4500	440			MIT	

σ		
Revision	0 -	
revulon	Uf	Cowses
		1307

	C	e. J. 1	No. 2 Title of Units		Nood	Pa	lev	ant		S	opa	2_
<u>s</u> .	Cowise	Course	Levised with The	1.05	For	J	0 ,	k	-		#	
No.		Title	Revised Content	Revisi	Revision	tole (ample are to 1984 to	a an habitana di	the Address of the Address	-	on Greenway or		and the same of
<u>_ ^</u>	sans	4 10 62	specified if it is	~on	er Whi		pode see	report.	-	-	2000	
		SAP ALL	hot the whole unit	lar			R	H	GI	EM	Fnt	4
1.	1933006	Labin	Include Lab	10%	To get					#		
	Linate	Relational	programs based	1124	deaper							
	- A-A-	DataBase	on DDL DIFICA	32 FS	Knowledge	- Company				and the latest the lat		-
		Hanggemo	-Del Queries,		in the			Commence of the Commence of th	100	arani ma kini tu arani d		
			PL/SQL programmi									- Aller of
			-ng concept	3	Concept			The second secon				the feet of the state of
K A	عابة	1 90 ad	which comprises	1.	Twd84na.C	1	NY.	11:10		The second		- double by
	19 who load	1	of a minimum	1	ie Hong							and and an older
			06 15 Lab box	1100	V	l deser						THE PERSON NAMED IN
	19154	1 7 1 541	Escercises saids									The second second
			implestion lieby mext	oho	1.000				A 100			(A) (4) (57.41)
2.	1934008	Labin	Include Lab	10%	90				#			and being the same
7 *		heb	programs based		exporting						6	The same of
	A COLOR	Dragrammi	on Scripting,		in the	ano A	194	A Price		1.0		1
	loca.	-ng	CSS and PHP	NA.	Concept	rright.			100000000000000000000000000000000000000		Mary Control	Section 1
	200	Hivopla	Server side	ST mo	of creating	1						Contract of the last
		U	Programming	exi	dynamic							Name and Address of the Owner, where
			which comprises		web			-				STATE OF THE PARTY.
			ob a minimum (V	do .	pages.							The second second
		A description	06 15 Lab	92			-	-			4	-
			Excarcises !	Ari	1							-
		The state of the			15 hazios							Commence of the
_3	1935009	Software	IV & V - Testing	10%.	70	oc.			女	#		-
			was given as a		acquire		-					NAME AND POST OFFICE AND POST OF THE PARTY O
		0 0	seperate unit		Knowlege			-				William State of State of
			which comprises		about		W. Andrewson	-				Marie and State of the Owner, where
			ob Online &		Softwale							-

				134 M. 101.	Revi				
and the second			The State of	Manual Testing	.Testing			1	_=
				Tooks.		Control of the contro			ج
		go grane and an electric comment or comment with a com-	policies 9		0/2				٨
naganga bini sal	4.	19350012	Lab in	Programs	10%	To expertis	*	#	
	an agenting	10 July 2 2	Dot Net	related to dynamic		in the			
*				Website Creation		Concept			
			0 0	using VB. Net L	and the same of the same	Ob Dynamic			
recalition will be				Asp. Net which	and the same of th	Web Peges.			
				comprises of					
		and place transport a see high is of the contract to re-form all appropriate account.	Designation of	15 Lab program.	. 193				
				loss Transactions and and and	0.0				
	5.	1011195	Internet	Damain un cille	70%	To adapt	k	*	
		17061725	1	Domain specific	m ba	to the			-
icinstituti mas			of things	Jot concepts cole	And the state of the section of the	latest			-
	agentinative statistical make a method			added and Madix					-
				70 Machine ideologie		Technologies			+
ministra est				ore implemented					-
			<u> </u>	A second of the		40.2			-
s d'avenue es			Carpertine		Bre	no get	-	#	-
a constant	6.	19761966	Iduman	Lades 1 Searching	65%	knowledge			-
			Computer	Algorithms are	200	on Covent			-
Sugar copical			Interaction	replaced with the	vinso	Algorithms.			-
t salar indone			a phromba	existing algorithms	1	V			-
				and conceph	sides!				_
				of Virgualinion		The state of the s			
	AND ADDRESS OF THE PARTY.	and the same of th	enter de la frança de la state de sensi de una diferencia	Reality ore		eritetikk en strekenings adect storromelar men periodist i seminant plackeringga som			
gurantan r	entriguestation standardisconti		territoriale Assistante la reconsultativa del control del control del control del control del control del cont	implemental				+++	100
uiscoule i	and the second of the second o							+++	1
Na policie in the	1	Constitution of the American	Line AC.	val palled - V	E M 3	व किर्वास्थ	100/50	H.	
	charters at the state of		S. WYLLES AND	Jan Marie Comment	4 4200	Manuarity /		1	-
			Makand	July Man Sho	V				-
and Charle			hinda	onlinger)					
sacquater	(Selan and Selan S	Alternative and the State of th	1000000000				1-1-1	11 \$	1

			No. 2 Titles of Units	00,320		_6	Sco	be		V.	cop	
C	Cowre	Cowne	Revised with the	4.	Keed	7	for	*	-	For #		
No	Code	Title	Revised Content specified	06	Hor	arta.	and weathern jump					nomi 1
		ter, purchased of designations of the second	if it is not the whole writ.	Revision	Revision	L	R	H	G	10 r	EMP	CONTRACTOR STATEMENT OF THE PARTY OF THE PAR
1	19008102	Problem	IV & V - Object	26%	10 gain	کم			也	#		participation of section
	-istagend	Solving	Oriented Programming	10, 20, 3	the	0.00	50 (3)					No. of Concession, Spinster, Spinste
		Using C	in C++ Concepts of		Knowledge	Ü						Mary Control of the Local
	and the second	for tra	Inhoritance will be		Concepts	rad			3			STATE OF STREET
	The state of the s		included			ers.	0		STREET, MANUAL	(M) (4 (1) (1) (4 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		STATES OF THE PARTY AND THE PARTY OF
			Ol - 1 O and ad Program	∂e/.	Jo gain			Wilder	d	STORES STORES		MARKET PROTESSES AND ADDRESS OF
_2,	19 PDB104	Lab-I Programming	Object Oriented Programmer Concepts with	, ASSOCIATION	knowlege	to a	a 7 1	decision actualization	Partie of the same	STATE OF THE STATE		MATERIAL PROPERTY AND ADDRESS.
		in C	Class, Objects, Inhalitance		in DOPS	Topical straight	6	Annual Control of the local lives	Gilhapmitel grass.	A COMPANSATION OF THE PERSON O		Approximate September 1867
			Exercises will be	Nic	Concept	C. C	T	-	The state of the s			STATE OF THE PERSON NAMED IN
ha .			included.	00	wasi A	1	9		-		,	STREET, STREET
Contr	W Same	Web	Include PHP with		To acquire				k	0	#_	PRINCIPAL SERVICES
3.	19 PDB103	Designing	Descreaming	202	Knowledge about	Spr Lak	extr.	E 2/2/2				CONTRACTOR SACRAGEMENT
		- 0		Bur	Dynamic			1		+		CHARLES SPECIFICATION
			rearing course Roser	Engi	web pages			7	+	8		SECTION SHOW AND PARTY BEI
ra P	ad nao	Jial bate	Jestin Flancel Autor	10%	To acquive		Jose	7 1	k	_ _;;	#	STREET STATES AND ADDRESS OF THE PERSON NAMED IN COLUMN NAMED
4	. JABOBIO	1	Include lab programs based on scripting,	107.	knowledge		7	1				STATE STATE STATE STATE
	i Lak	Programm	in CSS and PHP Solver	5.45	about	9 1	1101	-		and the		Semmentalisabilities.
		0	side Programming.	H t	Dynamic	1		1				Speciments and a late of the l
			hen to he size in	silit	Pages.		130	P	+	7		Name in case of the owner, in
	A Second		U STATE OF THE STA				+	+		+		Con- Constitution of the

-4/2	Other Suggestions:
	K: 10t Essel V. Santa Arc Dockson
	Computer Jundamentals le Architecture can be given as
	seporarie course de la
	, Tanke
12	Data Mining & Human Computer Interaction courses
	can be replaced by Digital Principles and Computer
	Organization.
	charac phieth, as the core
3.	Open Source Took Fan be included for programming
	Concepts.
4.	Minimum of the lab granding brick he imply by
	O S Special Control
	practical courses.
	in Colan Shiefs Educations in Dos
	Commandations:
	Python can be shifted to I year C III or IV Semeste
	10 th first good a Plankol Athons 9H9 worth land of bed de to source !
2.	Frameworks like Peach / Angular Is ade. can be included
	in web designing.
	Spranic Dyranic
3.	For Software Engineering Cowne Roger. S. Programan book Fan be Followed. Testing Manual Automarked Tools can be
	Fan be Followed. Testing Manual Automated Took can be
	sincluded sol sol more del shulent and al more
	Viele days on selectioning Konsidge
4.	Online courses like MODC, SWAYAM, MPTEL. Courses should
	completed by the students
•	Jork Books utilization to 1
3	Text Books utilization to be given for all cowners.

1	Dr. K. SUNDARAVADIVELU	K. J. Brooms
2.	DY. R. RATHINASABAPATHY	f. f. 14/2023
3.	Dr. M. PUSHPARANI	Jun Cyp 3/4/2023
4.	Mr. V. NEETHIDEVAN	V. M. 2-4. 23.
5.	Dr. S. BALAMURUGAN	Profitions
6.	Ms. A. DIVYASRI	A. Dry 69
٦.	Ms. S. SELVARANI	Slileanilar
8.	Ms. RAMYA. R	P 3 T4 123
9.	MS. J. AROCKIA JACKULINE JONI	30123
10.	MS. K. P. MAHESWARI	akprojuling
14.	Ms. P. RENGIANAYASI	P. Rup 3/4/23
12	DY. K. SANGEETHA DEAN OF ACADEMIC AFFAIRS	Dazetto

COLLEGE PROFILE

Fatima College (Autonomous), Mary Land, Madurai, is a Post Graduate and Research Institution for Women affiliated to Madurai Kamaraj University. It is a Catholic Minority institution established and run by St. Joseph's Society of Madurai (of the Congregation of the Sisters of St. Joseph of Lyons, France). This institution came into existence through the tireless efforts of the missionary sisters of St. Joseph of Lyons and the zeal and heroic sacrifice of Rev. Sr. Rose Benedicta, the Foundress of the College.

The College was started in St. Joseph's Campus Madurai as a Second Grade College with 63 students in 1953. It was upgraded into a Post Graduate College in 1964; Autonomous in 1990 and a Research Institute in 2004. The College now offers 21 Undergraduate Programmes, 13 Postgraduate Programmes, 2 Professional Programme, 5 M.Phil. Programmes and 6 Departments have become Research Centres. It has strength of 4134 Students, 206 Teaching Staff and 100 Non-Teaching Staff.

The comprehensive assessment by NAAC in 1999 placed Fatima College in Five Star Status of merit. The college strives to sustain excellence, quality and relevance while equipping the students to meet the demands of higher education in India. In 2004 UGC conferred on Fatima College the status of College with Potential for Excellence. In 2006 and 2013 NAAC Re-Accredited the College with 'A' Grade. The College was ranked 94th in the All India NIRF Ranking in 2019 by MHRD.

VISION OF THE COLLEGE

WOMEN'S EMPOWERMENT THROUGH EDUCATION

The vision of the college is to empower women by developing human capabilities through quality education based on Christian values, making them responsible citizens who can work for the advancement of the society and promote communal harmony in the multi-religious and multi-cultural reality of India eventually evolving into women of communion.

MISSION OF THE COLLEGE

- To enhance quality of life through the development of individuals.
- To enable women to become contributors in the economic, social and political development of India.
- To equip the students with 21st century skill-sets with a focus on problem-solving abilities
- To motivate them to work for social justice
- To give preference to the rural economically backward and first-generation learners
- To enable students to be employed in the technology oriented competitive market

VISION OF THE DEPARTMENT

The vision of the department is to empower women by bringing out their hidden potentials by providing quality computer education to meet excellence and adapt to the challenges of the society.

MISSION OF THE DEPARTMENT

- To bring out the inherent talents of each student & guide them to adapt to the dynamic IT world and make them responsible citizens.
- To be trained with cutting edge technologies in order to improve their personality in a supportive and caring environment.
- To build leadership traits among students.
- To inculcate ethical attitude among computer professionals.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

A graduate of B.C.A programme after three years,

PEO 1	Our graduates will be academic, digital and information literates, creative, inquisitive, innovative and desirous for the "more" in all aspects.
PEO 2	They will be efficient individuals and team performers, exhibiting progress, flexibility, transparency and accountability in their professional work
РЕО З	Our graduates will be effective managers in all sorts of real life and professional circumstances, making ethical decisions, pursuing excellence within the time frame and in demonstrating apt leadership skills
PEO 4	They will engage locally and globally evincing social and environmental stewardship, demonstrating civic responsibilities and employing right skills at the right moment

GRADUATE ATTRIBUTES (GA)

Fatima College empowers her women graduates holistically. A Fatimite achieves all-round empowerment by acquiring Social, Professional and Ethical competencies. A graduate would sustain and nurture the following attributes:

	I. SOCIAL COMPETENCE
GA 1	Deep disciplinary expertise with a wide range of academic and digital literacy
GA 2	Hone creativity, passion for innovation and aspire excellence
GA 3	Enthusiasm towards emancipation and empowerment of humanity
GA 4	Potentials of being independent
GA 5	Intellectual competence and inquisitiveness with problem solving abilities befitting the field of research
GA 6	Effectiveness in different forms of communications to be employed in personal and professional environments through varied platforms
GA 7	Communicative competence with civic, professional and cyber dignity and decorum
GA 8	Integrity respecting the diversity and pluralism in societies, cultures and religions
GA 9	All – inclusive skill sets to interpret, analyse and solve social and environmental issues in diverse environments
GA 10	Self awareness that would enable them to recognise their uniqueness through continuous self-assessment in order to face and make changes building on their strengths and improving their weaknesses
GA 11	Finesse to co-operate exhibiting team-spirit while working in groups to achieve goals
GA 12	Dexterity in self-management to control their selves in

	attaining the kind of life that they dream for
GA 13	Resilience to rise up instantly from their intimidating setbacks
GA 14	Virtuosity to use their personal and intellectual autonomy in being life-long learners
GA 15	Digital learning and research attributes
GA 16	Cyber security competence reflecting compassion, care and concern towards the marginalised
GA 17	Rectitude to use digital technology reflecting civic and social responsibilities in local, national and global scenario
	II. PROFESSIONAL COMPETENCE
GA 18	Optimism, flexibility and diligence that would make them professionally competent
GA 19	Prowess to be successful entrepreuners and become employees of trans-national societies
GA 20	Excellence in Local and Global Job Markets
GA 21	Effectiveness in Time Management
GA 22	Efficiency in taking up Initiatives
GA 23	Eagerness to deliver excellent service
GA 24	Managerial Skills to Identify, Commend and tap Potentials
	III. ETHICAL COMPETENCE
GA 25	Integrity and be disciplined in bringing stability leading a systematic life promoting good human behaviour to build better society
GA 26	Honesty in words and deeds
GA 27	Transparency revealing one's own character as well as self-esteem to lead a genuine and authentic life
GA 28	Social and Environmental Stewardship
GA 29	Readiness to make ethical decisions consistently from the galore of conflicting choices paying heed to their conscience
GA 30	Right life skills at the right moment

PROGRAMME OUTCOMES (PO)

On completion (after three years) of B.C.A programme, the students are able to:

	Model Tool Usage: Understand, analyze and apply the
PO 1	concepts of latest technologies to bring solutions to the
	problems in the areas of computer applications.
	Computer Knowledge: Analyze and synthesize computing
PO 2	systems through quantitative and qualitative techniques along
	with effective verbal and non-verbal communication.
	Environment Sustainability: Apply technical and professional
PO 3	skills practically to excel in providing solutions for solving
	complex real life problems satisfying industrial and societal
	needs.
	Team Work with Professional Skills: To promote leadership
	skills and also as an individual on working with
PO 4	multi-disciplinary projects using Modern computing tools and
	Open-Source Technologies.
	Ethics: Commit to professional ethics and cyber regulations
PO 5	considering the societal and environmental issues within local
	and global contexts for sustainable development

PROGRAMME SPECIFIC OUTCOMES (PSO)

On completion (after three years) of B.C.A programme, the students are able:

PSO 1	To achieve significant understanding of theoretical and
rso i	programming concepts in key areas of Computer Applications.
PSO 2	To expand and sharpen practical and problem solving skills to provide solutions to industry, society and business problems.
	problems.

PSO 3	To apply modern practices and strategies in software project development using open source and other programming environments.
PSO 4	To inculcate the ability to analyze and interpret problems, make inferences from the resulting data and apply technical skills to solve real time problems.
PSO 5	To make graduates understand various professional, technical and ethical issues prevailing in the industry
PSO 6	To gain exposure in preventive, ethical hacking and security technologies in recent trends
PSO 7	To equip the students to meet the requirement of Corporate world and Industry standards
PSO 8	To engage in professional development and to pursue Post graduate education in the fields of Information Technology and Computer Applications
PSO 9	To generate ideas of innovation and to identify, formulate and solve problems in software solutions, outsourcing services, public and private sectors
PSO 10	To engage the students technically on par with the societal and environmental responsibilities added with professional ethics

FATIMA COLLEGE (AUTONOMOUS), MADURAI-18 DEPARTMENT OF COMPUTER APPLICATIONS (BCA)

For those who joined in June 2023 onwards

PROGRAMME CODE: USCA

S.	SE	COURSE	COURSE TITLE	HRS	CRE	CIA	ESE	тот.
NO	M	CODE			DIT	Mks	Mks	Mks
1.	I	23J1CC1	PYTHON PROGRAMMING	5	5	40	60	100
2.	I	23J1CC2	PYTHON PROGRAMMING LAB	5	5	40	60	100
3.	I	23G1GEJ1	DISCRETE MATHEMATICS	5	3	40	60	100
4.	I	23J1FC	STRUCTURED PROGRAMMI NG IN C	2	2	40	60	100
5.	I	23J1SE1	ANIMATION TOOLS AND TECHNIQUES	2	2	40	60	100
6.	I	23G1VE	PERSONAL VALUES	1	1	40	60	100
7.	п	23J2CC3	OBJECT ORIENTED PROGRAMMING IN C++	5	5	40	60	100
8.	п	23J2CC4	LAB IN C++ PROGRAMMING	5	5	40	60	100
9.	п	23G2GEJ2	OPERATIONS RESEARCH	5	3	40	60	100
10.	11	23J2SE2	ANIMATION TOOLS AND TECHNIQUES	2	2	40	60	100
11.	II	23J2SE3	INTRODUCTION TO HTML	2	2	40	60	100
12.	п	23G2VE	VALUES FOR LIFE	1	1	40	60	100
13.	II	21UG2SLJ	OPEN SOURCE ANIMATION	-	2	40	60	100

TOOI			
IOOL			

EXTRA CREDIT COURSES

COURSE	SELF LEARNING COURSES for ADVANCED LEARNERS	HR S.	CRED ITS	SEMEST ER IN WHICH THE COURSE IS OFFERE D	CIA MK S	ESE MK S	TOT AL MA RKS
21J1SL1	Open SourceAnimationTools	ı	2	II	40	60	100
21J2SL ST2	StatisticalData ScienceUsing Python	-	2	II	40	60	100
21J3SL ST3	STATISTICSUSINGR	-	2	II	40	60	100
21J4SL JM4	Content WritingandVideo Editing	I	2	IV	40	60	100
21J5SL AC5	Emerging Trendsand Technologies	I	2	VI	40	60	100
	MOOC COURSES / International Certified online Courses (Department Specific Courses/any other courses) * Students can opt other than the listed course from UGC-SWAYAM UGC / CEC	-	Minim um 2 Credit s	I – VI	-	-	

OFF CLASS PROGRAMMES

19UAD2CA - Certificate Course VB.NET - (Only for First Years - Compulsory)

I B.C.A

SEMESTER - I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS	CREDITS
USCA	23J1CC1	PYTHON PROGRAMMING	CORE THEORY	5	5

COURSE DESCRIPTION

To get better understanding in the OOPS Concept and to have basic knowledge in writing programs using Python Programming.

COURSE OBJECTIVES

- 1. To makestudents understandthe concepts of Python programming.
- 2. ToapplytheOOPsconceptinPYTHONprogramming.
- 3. To impart knowledge on demand and supply concepts
- 4. To make the students learn best practices in PYTHON programming
- 5. To know the costs and profit maximization

UNITS

UNIT I: BASICS OF PYTHON PROGRAMMING

(15 HRS)

HistoryofPython – FeaturesofPython – Literal – Constants – Variables – Identifiers–Keywords – Built – inDataTypes – OutputStatements –Input Statements – Comments –Indentation – Operators-Expressions – Typeconversions – PythonArrays:DefiningandProcessingArrays – Arraymethods.

UNIT II: CONTROL STATEMENTS

(15 HRS)

Selection/Conditional Branchingstatements – if –if-else – nestedifand if-elif – else statements – Iterative Statements: whileloop – forloop – elsesuiteinloop&nested loops – Jump Statements:break – continue&passstatements.

UNIT III: FUNCTIONS (15 HRS)

Function Definition – Function Call – Variable Scope & its Lifetime – return Statement.FunctionArguments:RequiredArguments – Keyword Arguments, Default Arguments and Variable LengthArguments – Recursion – PythonStrings:Stringoperations – ImmutableStrings – Built-in String Methods and Functions – String Comparison – Modules: import statement – Python module – dir()function – ModulesandNamespace–Definingourownmodules.

UNIT IV: LISTS (15 HRS)

Creatingalist – Access valuesin List – Updating values in Lists – Nestedlists – Basic list operations – List Methods – Tuples: Creating – Accessing – UpdatingandDeletingElements–Nestedtuples–Differencebetweenlistsandtup les – Dictionaries:Creating – Accessing – Updating andDeleting – ElementsinaDictionary–DictionaryFunctionsandMethods – DifferencebetweenListsandDictionaries.

UNIT V: PYTHON FILE HANDLING

(15 HRS)

Typesof files in Python – Opening and Closingfiles – Reading and Writing files: write () and writelines() methods – append()method–read()andreadlines()methods–withkeyword–Splittingwords – File Methods – FilePositions – Renaminganddeletingfiles.

TEXT BOOK:

- 1. ReemaThareja,PythonProgrammingusingproblemsolvingapproach, FirstEdition, 2017,Oxford UniversityPress.
- 2. Dr.R.NageswaraRao, CorePythonProgramming,FirstEdition,2017, Dreamtech Publishers.

REFERENCE BOOKS:

- 1. VamsiKurama, Python Programming: A Modern Approach Pearson Education.
- 2. MarkLutz, Learning Python, Orielly.
- 3. AdamStewarts, PythonProgramming, Online.

- 4. FabioNelli, PythonDataAnalytics, APress.
- 5. KennethA. Lambert, Fundamentals of Python–First Programs, CENGAGE Publication.

WEB REFERNECES:

https://www.programiz.com/python-programming

https://www.guru99.com/python-tutorials.html

https://www.w3schools.com/python/python_intro.asp

https://www.geeksforgeeks.org/python-programming-language/

https://en.wikipedia.org/wiki/Python (programming language)

OER REFERENCES:

1. https://www.oercommons.org/authoring/14616-c/view

COURSE CONTENTS & LECTURE SCHEDULE:

Mod ule No.	Topic	No. of Lectu res	Teachi ng Pedag ogy	Teach ing Aids
	PYTHON PROGRAMMING			
	UNIT I: BASICS OF PYTHON PROGR	AMMIN	G	
1.1	HistoryofPython – FeaturesofPython	2	Chalk & Talk	Black Board
1.2	Literal – Constants – Variables – Identifiers	2	Chalk & Talk	LCD
1.3	Keywords – Built-inDataTypes	2	Lectur e	PPT & White board
1.4	OutputStatements –Input Statements – Comments	2	Lectur e	Smart Board
1.5	Indentation – Operators –Expressions	2	Lectur e	Black Board
1.6	Typeconversions	1	Discus sion	Google classr oom
1.7	Python Arrays:DefiningandProcessingArrays	2	Lectur	Black

			е	Board
1.8	Array Methods	2	Discus sion	Black Board
	UNIT-2 CONTROL STATEMEN	NTS		
2.1	Selection/Conditional Branching statements: if	3	Chalk & Talk	Black Board
2.2	if-else – nestedifand if-elifelse statements	3	Chalk & Talk	LCD
2.3	Iterative Statements: while loop	3	Lectur e	PPT & White board
2.4	forloop – elsesuiteinloopand nested loops.	2	Lectur e	Smart Board
2.5	Jump Statements: break	2	Lectur e	Black Board
2.6	Continueand Passstatements.	2	Discus sion	Google classr oom
	UNIT -3 FUNCTION			
3.1	Function Definition – Function Call	3	Chalk & Talk	Black Board
3.2	Variable Scope and its Lifetime – returnStatement	2	Chalk & Talk	LCD
3.3	FunctionArguments:RequiredArguments -Keyword, Arguments – Default Arguments and Variable LengthArguments – Recursion	2	Lectur e	PPT & White board
3.4	PythonStrings:Stringoperations – ImmutableStrings	3	Lectur e	Smart Board
3.5	Built-in String Methods and Functions – String Comparison	2	Lectur e	Black Board
3.6	Modules: import statement– The Python module – dir() function – ModulesandNamespace–Definingourownm	3	Lectur e	Black Board

	odules			
	UNIT -4 LISTS			
4.1	Lists: Creatingalist-Accessvalues in List	2	Chalk & Talk	Black Board
4.2	Updating values in Lists-Nestedlists-Basiclistoperations-List Methods.	3	Chalk & Talk	LCD
4.3	Tuples: Creating,Accessing,UpdatingandDeletingEl ementsin a tuple	2	Lectur e	PPT & White board
4.4	Nestedtuples–Differencebetweenlistsandtu ples.	3	Lectur e	Smart Board
4.5	Dictionaries:Creating,Accessing,Updatinga ndDeletingElementsina Dictionary	3	Lectur e	Black Board
4.6	DictionaryFunctionsandMethods-Differenc ebetweenListsandDictionaries.	2	Discus sion	Google classr oom
	UNIT -5 PYTHON FILE HANDL	ING		
5.1	Types of files in Python	2	Chalk & Talk	Black Board
5.2	Opening and Closingfiles-Reading and Writing files: write() and writelines() methods.	3	Chalk & Talk	LCD
5.3	append()method–read()andreadlines()method s	2	Lectur e	PPT & White board
5.4	withkeyword–Splittingwords	3	Lectur e	Smart Board
5.5	Filemethods-File Positions	3	Lectur e	Black Board
5.6	Renaminganddeletingfiles	2	Discus sion	Google classr oom

EVALUATION PATTERN

	C1	C2	C3	C4	C5	Total Scholas tic Marks	Non Schola stic Marks C6		% of
Levels	Т1	Т2	Quiz	Assi gnm ent	OBT/ PPT				Asses sment
	10 Mks.	10 Mks.	5 Mks.	5 Mks	5 Mks	35 Mks.	5 Mks.	40M ks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
кз	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholas tic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA						
Scholastic	35					
Non Scholastic	5					
TOTAL	40					

✓ The levels of CIA Assessment based on Revised Bloom's Taxonomy are:

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC	NON - SCHOLASTIC	MARKS
--	------------	---------------------	-------

C1	C2	СЗ	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Learn the basics of python, Do simple programs on python, Learn how to use an array.	K1 & K2	PSO1, PSO2
CO 2	Developprogramusingselectionstate ment, Workwith Looping and jumpsta tements, Doprograms on Loops and jumpstatements.	K1 & K2	PSO1, PSO2,PSO3
CO 3	Concept of function, function arguments, Implementing theconceptstringsinvariousapplica tion, Significance of Modules, Workwith functions, Strings and modules.	K1, K2, K3 & K4	PSO3, PSO4
CO 4	WorkwithList,tuplesanddictionary, Writeprogramusinglist,tuplesanddi ctionary.	K1, K2 & K3	PSO3, PSO4
CO 5	UsageofFilehandlingsinpython,Con ceptofreadingandwritingfiles,Dopro gramsusingfiles.	K1, K3 & K4	PSO3, PSO5

Mapping COs Consistency with PSOs

CO/PS O	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO1 0
CO1	3	3	1	1	1	1	1	2	1	1
CO2	3	3	3	1	1	1	1	2	1	1

соз	2	2	3	3	1	1	2	2	1	1
CO4	2	2	3	3	1	1	2	2	1	1
CO5	2	2	3	2	3	1	2	2	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4	PO5
CO1	3	1	1	1	1
CO2	1	1	3	1	2
CO3	1	2	1	3	1
CO4	1	1	1	2	1
CO5	1	3	1	1	1

Note:

- ♦ Strongly Correlated **3**
- ♦ Moderately Correlated 2
- ♦ Weakly Correlated -1

COURSE DESIGNER:

1. Staff Name: Ms. MAHESWARI K P

Forwarded By

(S.Selvarani)

HOD'S Signature & Name

I B.C.A SEMESTER – I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS	CREDITS
USCA	23J1CC2	PYTHON PROGRAMMING LAB	CORE PRACTICALS	5	5

COURSE DESCRIPTION

To get better understanding in the OOPS Concept and to have basic knowledge in writing programs using Python Programming.

COURSE OBJECTIVES

- 1. BeabletodesignandprogramPythonapplications.
- 2. Beable tocreateloopsanddecisionstatementsinPython.
- 3. BeabletoworkwithfunctionsandpassargumentsinPython.
- 4. BeabletobuildandpackagePythonmodulesfor reusability.
- 5. BeabletoreadandwritefilesinPython.

PROGRAM LIST:

- 1. Programusingvariables, constants, I/Ostatements in Python.
- 2. ProgramusingOperatorsinPython.
- 3. ProgramusingConditionalStatements.
- 4. ProgramusingLoops.
- 5. ProgramusingJumpStatements.
- 6. ProgramusingFunctions.
- 7. ProgramusingRecursion.
- 8. ProgramusingArrays.
- 9. ProgramusingStrings.
- 10. Program using Modules.
- 11. ProgramusingLists.
- 12. ProgramusingTuples.
- 13. Programusing Dictionaries.
- 14. ProgramforFileHandling.

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic PYTHON PROGRA	No. of Lectures	Teaching Pedagogy	Teachin g Aids
1.1	Program using variables, constants, I/O statements in Python	4	Demo & Lab	LCD
1.2	Program using Operators in	4	Demo &	LCD

	Python		Lab	
1.0	Program using Conditional	4	Demo &	LCD
1.3	Statements		Lab	
	Program using Loops	4	Demo &	LCD
1.4	Program using Loops		Lab	
	Program using Jump	4	Demo &	LCD
1.5	Statements		Lab	
	Drogram using Function	4	Demo &	LCD
1.6	Program using Function		Lab	
1.7	Program using Recursion	4	Demo &	LCD
1.7	1 rogram using recursion		Lab	
1.0	Program using Arrays	4	Demo &	LCD
1.8	Trogram using mrays		Lab	
1.0	Program using Strings	4	Demo &	LCD
1.9	Trogram doing burings	'	Lab	
1 10	Program using Modules	4	Demo &	LCD
1.10	Trogram doing modules	'	Lab	
1 1 1	Program using Lists	5	Demo &	LCD
1.11	Trogram using bists		Lab	
1.10	Program using Tuples	5	Demo &	LCD
1.12	Trogram doing rupies		Lab	
1 10	Program using Dictionaries	5	Demo &	LCD
1.13	110grain doing Dictionaries		Lab	
1 1 4	Due and the Dile II - 11:	5	Demo &	LCD
1.14	Program for File Handling		Lab	

EVALUATION PATTERN

Levels	C1	C2	СЗ	C4	C 5	Total Scholas tic Marks	Non Schola stic Marks C6	CIA Total	% of Asses sment
--------	----	----	----	----	------------	----------------------------------	--------------------------------------	--------------	------------------------

	Т1	Т2	Quiz	Assi gnm ent	OBT/ PPT				
	10 Mks.	10 Mks.	5 Mks.	5 Mks	5 Mks	35 Mks.	5 Mks.	40M ks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
КЗ	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholas tic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA				
Scholastic	35			
Non Scholastic	5			
TOTAL	40			

✓ The levels of CIA Assessment based on Revised Bloom's Taxonomy are:

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC			NON - SCHOLASTIC		MARKS	1	
C1	C2	СЗ	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE	PSOs	

		LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	ADDRESSED	
CO 1	Demonstratetheunderstandingofsynt	K1 & K2	PSO1, PSO2	
	axandsemanticsof Python			
00.0	IdentifytheproblemandsolveusingPY	*** 0 ***	PSO1,	
CO 2	THONprogrammingtechniques.	K1 & K2	PSO2,PSO3	
	Identifysuitableprogrammingconstru	K1, K2, K3 &		
CO 3	ctsforproblemsolving.	K4	PSO3, PSO4	
	AnalyzevariousconceptsofPYTHONla			
	nguagetosolvetheprobleminanefficie	K1, K2 &		
CO 4	nt	К3	PSO3, PSO4	
	way.			
	DevelopaPYTHONprogramfor a			
CO 5	givenproblemandtestforitscorrectnes	K1, K3 & K4	PSO3, PSO5	
	s.			

Mapping COs Consistency with PSOs

CO/PS O	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO1 0
CO1	3	3	1	1	1	1	1	1	2	1
CO2	3	3	3	1	1	1	1	1	1	1
соз	2	2	3	2	1	1	2	1	2	1
CO4	2	2	3	3	1	1	2	1	1	1
CO5	2	2	3	2	3	1	2	1	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	РО3	PO4	PO5
CO1	3	1	1	1	1
CO2	1	1	3	1	2
CO3	1	2	1	3	1

CO4	3	1	1	2	1
CO5	1	2	1	1	1

Note:

♦ Strongly Correlated – 3

♦ Moderately Correlated – 2

♦ Weakly Correlated -1

COURSE DESIGNER:

1. Staff Name: Ms. MAHESWARI K P

Forwarded By

(S.Selvarani) HOD'S Signature & Name

I B.C.A

SEMESTER – II

For those who joined in 2023 onwards

PROGRAMM E CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS	CREDITS
USCA	23J2CC3	OBJECT ORIENTED PROGRAMMING CONCEPTS USING C++	CORE THEORY	5	5

COURSE DESCRIPTION

To get better understanding in the OOPS Concept and to have basic knowledge in writing programs using C++ Programming.

COURSE OBJECTIVES

1. Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects

- 2. Understand dynamic memory management techniques using pointers, constructors, destructors, etc
- 3. Describe the concept of function overloading, operator overloading, virtual functions and polymorphism
- 4. Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
- 5. Demonstrate the use of various OOPs concepts with the help of programs

UNITS

UNIT I: INTRODUCTION TO C++ HRS)

(15

Introduction to C++ - key concepts of Object-Oriented Programming -Advantages - Object Oriented Languages - I/O in C++ - C++ Declarations. Control Structures: - Decision Making and Statements: If ..else, jump, goto, break, continue, Switch case statements - Loops in C++ :for, while, do - functions in C++ - inline functions - Function Overloading.

UNIT II: CLASSES AND OBJECTS

(15 HRS)

Classes and Objects: Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions – Bit fields and classes – Constructor and destructor with static members.

UNIT III: OPERATOR OVERLOADING & INHERITANCE (15 HRS)

Operator Overloading: Overloading unary, binary operators – Overloading Friend functions –type conversion – Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multi path inheritance – Virtual base Classes – Abstract Classes.

UNIT IV: POINTERS & ARRAYS

(15 HRS)

Pointers - Declaration - Pointer to Class, Object - this pointer -

Pointers to derived classes and Base classes – Arrays – Characteristics – array of classes – Memory models – new and delete operators – dynamic object – Binding, Polymorphism and Virtual Functions.

UNIT V: FILES (15 HRS)

Files – File stream classes – file modes – Sequential Read / Write operations – Binary and ASCII Files – Random Access Operation – Templates – Exception Handling – String – Declaring and Initializing string objects – String Attributes – Miscellaneous functions.

TEXT BOOK:

1. E. Balagurusamy, "Object-Oriented Programming with C++", TMH 2013, 7th Edition

REFERENCE BOOKS:

- 1. Ashok N Kamthane, "Object-Oriented Programming with ANSI and Turbo C++", Pearson Education 2003.
- 2. Maria Litvin& Gray Litvin, "C++ for you", Vikas publication 2002.
- 3. Object-Oriented Programming Using C++ by Alok Kumar Jagadev , Amiya Kumar Rath , SatchidanandaDehuri , PHI Learning, 2017

WEB REFERNECES:

https://alison.com/course/introduction-to-c-plus-programming
https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/
https://www.w3schools.com/cpp/cpp_oop.asp

OER REFERENCES:

1. https://www.oercommons.org/authoring/14616-c/view

COURSE CONTENTS & LECTURE SCHEDULE:

Module	Topic	No. of	Teaching	Teaching						
No.		Lectures	Pedagogy	Aids						
O	OBJECT ORIENTED PROGRAMMING CONCEPTS USING C++									

	UNITI: INTRODUCTION TO C++										
1.1	Introduction to C++ - key concepts of Object-Oriented Programmi	2	Chalk & Talk	Black Board							
1.2	Advantages – Object Oriented Languages – I/O in C++- C++ Declarations	1	Chalk & Talk	LCD							
1.3	Control Structures: - Decision Making and Statements	2	Lecture	PPT & White board							
1.4	Ifelse, jump, goto, break, continue	2	Lecture	Smart Board							
1.5	Switch case statements	1	Lecture	Black Board							
1.6	Loops in C++ :for, while, do	1	Discussion	Google classroom							
1.7	functions in C++ - inline functions	2	Lecture	Black Board							
1.8	Function Overloading	1	Discussion	Black Board							
	UNIT-IICLASSES AND C	DBJECTS									
2.1	Classes and Objects: Declaring Objects	2	Chalk & Talk	Black Board							
2.2	Defining Member Functions	2	Chalk & Talk	LCD							
2.3	Static Member variables and functions	2	Lecture	PPT & White board							
2.4	array of objects - friend functions	2	Lecture	Smart Board							
2.5	Overloading member functions - Bit fields and classes	2	Lecture	Black Board							
2.6	Constructor and destructor with static members.	2	Discussion	Google classroom							

	UNIT -IIIOPERATOR OVERLO	ADING & I	NHERITANC	E
3.1	Operator Overloading: Overloading unary, binary operators	2	Chalk & Talk	Black Board
3.2	Overloading Friend functions	2	Chalk & Talk	LCD
3.3	type conversion – Inheritance: Types of Inheritance	2	Lecture	PPT & White board
3.4	Single, Multilevel, Multipleinheritance	2	Lecture	Smart Board
3.5	Hierarchal, Hybrid, Multi path inheritance	2	Lecture	Black Board
3.6	Virtual base Classes – Abstract Classes.	2	Lecture	Black Board
	UNIT -IVPOINTERS	& ARRAYS		
4.1	Pointers – Declaration	2	Chalk & Talk	Black Board
4.2	Pointer to Class , Object	2	Chalk & Talk	LCD
4.3	this pointer – Pointers to derived classes and Base classes	2	Lecture	PPT & White board
4.4	Arrays – Characteristics - array of classes	2	Lecture	Smart Board
4.5	Memory models – new and delete operators	2	Lecture	Black Board
4.6	Dynamic object – Binding, Polymorphism and Virtual Functions.	2	Discussion	Google classroom
	UNIT -V FI	LES		
5.1	Files – File stream classes –	2	Chalk &	Black

	file modes.		Talk	Board
5.2	Sequential Read / Write operations	2	Chalk & Talk	LCD
5.3	Binary and ASCII Files – Random Access Operation –	2	Lecture	PPT & White board
5.4	Templates – Exception Handling	2	Lecture	Smart Board
5.5	String – Declaring and Initializing string objects –	2	Lecture	Black Board
5.6	String Attributes – Miscellaneousfunctions	2	Discussion	Google classroom

EVALUATION PATTERN

	C1	C2	СЗ	C4	C5	Total Scholas tic Marks	Non Schola stic Marks C6	CIA Total	% o f
Levels	Т1	Т2	Quiz	Assi gnm ent	OBT/ PPT				Asses sment
	10 Mks.	10 Mks.	5 Mks.	5 Mks	5 Mks	35 Mks.	5 Mks.	40M ks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
кз	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholas tic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA						
Scholastic 35						
Non Scholastic	5					
TOTAL	40					

✓ The levels of CIA Assessment based on Revised Bloom's Taxonomy are:

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC			NON - SCHOLASTIC		MARKS		
C1	C2	С3	C4	C5	C6	CIA	ESE	Total
10	10 5 5 5			5	40	60	100	

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSE D
CO 1	Assess the object – oriented concepts in C++	K1 & K2	PSO1, PSO2
CO 2	Illustrate the usage of classes and objects in C++	K1 & K2	PSO1, PSO2,PSO3
CO 3	Analyze polymorphic feature of C++	K1, K2, K3 & K4	PSO3, PSO4
CO 4	Demonstrate on pointers and arrays	K1, K2 & K3	PSO3, PSO4
CO 5	Outline the file operations in C++	K1, K3 & K4	PSO3, PSO5

Mapping COs Consistency with PSOs

CO/PS O	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO1 0
CO1	3	3	1	1	1	2	2	2	1	1
CO2	3	3	3	1	1	1	1	2	1	1
соз	2	2	3	3	1	1	2	1	1	1
CO4	2	2	3	3	1	1	2	1	1	1
CO5	2	2	3	2	3	1	2	2	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4	PO5
CO1	3	1	1	1	1
CO2	1	1	3	1	2
CO3	1	1	2	3	1
CO4	1	3	1	2	2
CO5	1	2	3	1	1

Note:

- ♦ Strongly Correlated **3**
- ♦ Moderately Correlated 2
- ♦ Weakly Correlated -1

COURSE DESIGNER:

1. Staff Name: Ms. MAHESWARI K P

Forwarded By

(S.Selvarani)

HOD'S Signature & Name

I B.C.A SEMESTER – II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS	CREDITS
USCA	23J2CC4	C++ PROGRAMMING LAB	CORE PRACTICALS	5	5

COURSE DESCRIPTION

To get better understanding in the OOPS Concept and to have basic knowledge in writing programs using C++ Programming.

COURSE OBJECTIVES

- 1. Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects
- 2. Understand dynamic memory management techniques using pointers, constructors, destructors, etc
- 3. Describe the concept of function overloading, operator overloading, virtual functions and polymorphism
- 4. Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
- 5. Demonstrate the use of various OOPs concepts with the help of programs

PROGRAM LIST:

- 1. Write a C++ program to demonstrate function overloading, Default Arguments and Inline function.
- 2. Write a C++ program to demonstrate Class and Objects
- 3. Write a C++ program to demonstrate the concept of Passing Objects to

Functions

- 4. Write a C++ program to demonstrate the Friend Functions.
- 5. Write a C++ program to demonstrate the concept of Passing Objects to Functions
- 6. Write a C++ program to demonstrate Constructor and Destructor
- 7. Write a C++ program to demonstrate Unary Operator Overloading
- 8. Write a C++ program to demonstrate Binary Operator Overloading
- 9. Write a C++ program to demonstrate:
 - Single Inheritance
 - Multilevel Inheritance
 - Multiple Inheritance
 - Hierarchical Inheritance
 - Hybrid Inheritance
- 10. Write a C++ program to demonstrate Virtual Functions.
- 11. Write a C++ program to manipulate a Text File.
- 12. Write a C++ program to perform Sequential I/O Operations on a file.
- 13. Write a C++ program to find the Biggest Number using Command Line Arguments
- 14. Write a C++ program to demonstrate Class Template
- 15. Write a C++ program to demonstrate Function Template.
- 16. Write a C++ program to demonstrate Exception Handling.

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
	C++ PROGR	RAMMING 1	LAB	
1.1	Function overloading	4	Demo & Lab	LCD
1.2	Class and Objects	4	Demo & Lab	LCD
1.3	Objects to Functions	4	Demo & Lab	LCD

1.4	Constructor and Destructor	4	Demo & Lab	LCD
1.5	Unary Operator Overloading	4	Demo & Lab	LCD
1.6	Binary Operator Overloading	4	Demo & Lab	LCD
1.7	Single Inheritance	4	Demo & Lab	LCD
1.8	Multilevel Inheritance	4	Demo & Lab	LCD
1.9	Multiple Inheritance	4	Demo & Lab	LCD
1.10	Hierarchical Inheritance	4	Demo & Lab	LCD
1.11	Hybrid Inheritance	4	Demo & Lab	LCD
1.12	Virtual Functions	4	Demo & Lab	LCD
1.13	File Manipulations	4	Demo & Lab	LCD
1.14	Command Line Arguments	4	Demo & Lab	LCD
1.15	Class Template	4	Demo & Lab	LCD

EVALUATION PATTERN

	C1	C2	СЗ	C4	C5	Total Scholas tic Marks	Non Schola stic Marks C6	CIA Total	% of
Levels	Т1	Т2	Quiz	Assi gnm ent	OBT/ PPT				Asses sment
	10 Mks.	10 Mks.	5 Mks.	5 Mks	5 Mks	35 Mks.	5 Mks.	40M ks.	
K1	2	2	-	-	-	4	-	4	10 %

K2	2	2	5	-	-	9	-	9	22.5 %
кз	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholas tic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA					
Scholastic	35				
Non Scholastic	5				
TOTAL	40				

✓ The levels of CIA Assessment based on Revised Bloom's Taxonomy are:

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC			NON - SCHOLASTIC		MARKS		
C1	C2	С3	C4	C5	C6	CIA ESE		Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSE D
-----	-----------------	--	-----------------------

CO 1	Read, understand and trace the execution of programs written in C++ language	K 1	PSO1, PSO2
CO 2	Demonstrate class and object functions	K1 & K2	PSO1, PSO2,PSO3
CO 3	Assess operator overloading and function overloading to specific problem definition	K1 & K2	PSO3, PSO4
CO 4	Demonstrate file operations in C++.	K1, K2 & K3	PSO4, PSO5
CO 5	Write C++ code to demonstrate Template&Exception Handling concept	K2, K3 & K4	PSO5, PSO6

Mapping COs Consistency with PSOs

CO/PS O	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO1 0
CO1	3	3	1	1	2	2	1	2	1	1
CO2	3	3	3	1	2	1	1	1	1	1
соз	2	2	3	2	2	1	2	1	1	1
CO4	2	1	3	2	1	1	2	2	1	1
CO5	2	1	3	2	3	1	2	2	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	РО3	PO4	PO5
CO1	2	3	1	1	1
CO2	1	2	3	1	2
CO3	1	2	2	3	1
CO4	1	3	1	2	1
CO5	1	3	2	2	1

Note:

- ◆ Strongly Correlated 3
 ◆ Moderately Correlated 2

♦ Weakly Correlated -1

COURSE DESIGNER:

1. Staff Name: Ms. MAHESWARI K P

Forwarded By

(S.Selvarani)

Selvaran

HOD'S Signature& Name

I B.C.A SEMESTER – I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS	CREDIT S
USCA	23J1SE1	ANIMATION TOOLS AND TECHNIQUES	SKILL ENHANCEMENT COURSE (NON MAJOR ELECTIVE I) PRACTICALS	2	2

COURSE DESCRIPTION

This course helps to become familiar with the elements and tools in Alice that is used to create interactive animated media such as scene creation and movie making.

COURSE OBJECTIVES

- 1. To develop programming skills and impart animation techniques using Alice.
- 2. To gain knowledge in interactive scene creation.
- 3. To create motion movies by animating

PROGRAM LIST:

- 1. Exploring the Alice interface
- 2. Setting the scene :Adding an object, Set object properties, Set special effects

- 3. Learning to program through Alice: Do in Order, Do Together
- 4. Branching: Conditional execution, Relational Operators, Randomness
- 5. Looping: Repetition, While loops, Lists
- 6. Event handling, Methods
- 7. 3D and billboards (Create 3D Text, Billboards)

TEXT BOOK:

1. Wanda Dann, Stephen Cooper, and Randy Pausch; Learning to Program with Alice, Prentice Hall

REFERENCE BOOK:

1. Joel Adams, Alice 3 in Action with Java

OER REFERENCES:

http://courses.oermn.org/course/view.php?id=224

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
	ANIMATION TOOLS AN	ID TECHNIC	QUES	
1.1	Exploring the Alice interface	4	Demo & Working in Lab	LCD
1.2	Setting the scene (Addinganobject, setobjectproperties, setspecialeffects)	4	Demo & Working in Lab	LCD
1.3	Learning to programthroughAlice (Doinorder ,Dotogether)	4	Demo & Working in Lab	LCD
1.4	Branching: Conditionalexecution, RelationalOperators, Randomness	4	Demo & Working in Lab	LCD

1.5	Looping : Repetition,Whileloops,Lists	4	Demo & Working in Lab	LCD
1.6	Event handling	4	Demo & Working in Lab	LCD
1.7	Methods	3	Demo & Working in Lab	LCD
1.8	3dand billboards (Create 3DText, Billboards)	3	Demo & Working in Lab	LCD

EVALUATION PATTERN

	C1	C2	C3	C4	C5	Total Scholas tic Marks	Non Schola stic Marks C6	CIA Total	% of
Levels	Т1	Т2	Quiz	Assi gnm ent	OBT/ PPT				Asses sment
	10 Mks.	10 Mks.	5 Mks.	5 Mks	5 Mks	35 Mks.	5 Mks.	40M ks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
кз	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholas tic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35

Non Scholastic	5
TOTAL	40

✓ The levels of CIA Assessment based on Revised Bloom's Taxonomy are:

K1- Remember, K2-Understand, K3-Apply, K4-Analyse

		SCHOI	LASTIC		NON - SCHOLASTIC	MARKS		
C1	C2	С3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSE D
CO 1	Apply object properties, methods and events	K1	PSO1& PSO2
CO 2	Design, create and edit animation scenes and interactive movies	K1, K2	PSO3
CO 3	Utilize event handling methods and properties	K1 & K3	PSO5
CO 4	Demonstrate story boards and animation movies	K1, K2, K3	PSO2, PSO3
CO 5	Utilize and understand different sounds and sound formats in alice	K2 & K4	PSO5, PSO8

Mapping COs Consistency with PSOs

CO/PS O	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO1 0
CO1	3	3	1	1	1	1	1	2	1	1
CO2	3	3	3	1	1	1	1	2	1	1
соз	2	1	3	3	1	1	2	2	1	1
CO4	2	1	3	3	1	2	2	2	1	1
CO5	2	2	3	2	3	2	2	1	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	РО3	PO4	PO5
CO1	3	1	1	1	1
CO2	1	1	3	1	2
CO3	1	1	1	3	2
CO4	1	3	1	2	1
CO5	1	3	1	1	1

Note:

- ♦ Strongly Correlated **3**
- ♦ ModeratelyCorrelated **-2**
- ♦ WeaklyCorrelated -1

COURSE DESIGNER:

1. Staff Name: Ms. AROCKIA JACKULINE JONI

Forwarded By

(S.Selvarani)

HOD'S Signature& Name

I B.C.A SEMESTER – II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS	CREDITS
USCA	23J2SE2	ANIMATION TOOLS AND TECHNIQUES	SKILL ENHANCEME NT COURSE (NON MAJOR ELECTIVE II) PRACTICALS	2	2

COURSE DESCRIPTION

This course helps to become familiar with the elements and tools in Alice that is used to create interactive animated media such as scene creation and movie making.

COURSE OBJECTIVES

- 1. To develop programming skills and impart animation techniques using Alice.
- 2. To gain knowledge in interactive scene creation.
- 3. To create motion movies by animating

PROGRAM LIST:

- 1. Exploring the Alice interface
- 2. Setting the scene :Adding an object, Set object properties, Set special effects
- 3. Learning to program through Alice: Do in Order, Do Together
- 4. Branching: Conditional execution, Relational Operators, Randomness
- 5. Looping: Repetition, While loops, Lists
- 6. Event handling, Methods
- 7. 3D and billboards (Create 3D Text, Billboards)

TEXT BOOK:

2. Wanda Dann, Stephen Cooper, and Randy Pausch; Learning to Program with Alice, Prentice Hall

REFERENCE BOOK:

1. Joel Adams, Alice 3 in Action with Java

OER REFERENCES:

http://courses.oermn.org/course/view.php?id=224

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
	NON MAJOR I	ELCTIVE		
1.1	Exploring the Alice interface	4	Demo & Working in Lab	LCD
1.2	Setting the scene (Addinganobject, setobjectproperties, setspecialeffects)	4	Demo & Working in Lab	LCD
1.3	Learning to programthroughAlice (Doinorder ,Dotogether)	4	Demo & Working in Lab	LCD
1.4	Branching: Conditionalexecution, RelationalOperators, Randomness	4	Demo & Working in Lab	LCD
1.5	Looping : Repetition,Whileloops,Lists	4	Demo & Working in Lab	LCD
1.6	Event handling	4	Demo & Working in Lab	LCD
1.7	Methods	3	Demo & Working in Lab	LCD
1.8	3dand billboards (Create 3DText, Billboards)	3	Demo & Working in Lab	LCD

EVALUATION PATTERN

	C1	C2	C3	C4	C5	Total Scholas tic Marks	Non Schola stic Marks C6	CIA Total	% of
Levels	Т1	Т2	Quiz	Assi gnm ent	OBT/ PPT				Asses sment
	10 Mks.	10 Mks.	5 Mks.	5 Mks	5 Mks	35 Mks.	5 Mks.	40M ks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
кз	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholas tic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
TOTAL	40

✓ The levels of CIA Assessment based on Revised Bloom's Taxonomy are:

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC			NON - SCHOLASTIC		MARKS		
C1	C2	С3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSE D
CO 1	Apply object properties, methods and events	K1	PSO1& PSO2
CO 2	Design, create and edit animation scenes and interactive movies	K1, K2	PSO3
CO 3	Utilize event handling methods and properties	K1 & K3	PSO5
CO 4	Demonstrate story boards and animation movies	K1, K2, K3	PSO2, PSO3
CO 5	Utilize and understand different sounds and sound formats in alice	K2 & K4	PSO5, PSO8

Mapping COs Consistency with PSOs

CO/PS O	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO1 0
CO1	3	3	1	1	1	1	1	2	1	1
CO2	3	3	3	1	1	1	1	2	1	1
соз	2	1	3	3	1	1	2	2	1	1
CO4	2	1	3	3	1	2	2	2	1	1
CO5	2	2	3	2	3	2	2	1	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4	PO5
CO1	3	1	1	1	1
CO2	1	1	3	1	2
соз	1	1	1	3	2
CO4	1	3	1	2	1
CO5	1	3	1	1	1

Note:

- ♦ Strongly Correlated **3**
- ♦ ModeratelyCorrelated **-2**
- ♦ WeaklyCorrelated -1

COURSE DESIGNER:

1. Staff Name: Ms. AROCKIA JACKULINE JONI

Forwarded By

(S.Selvarani)

Selvarari

HOD'S Signature& Name

I B.C.A

SEMESTER - II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS	CREDITS
USCA	23J2SE3	INTRODUCTION TO HTML	PRACTICALS	2	2

COURSE DESCRIPTION

To understand in the basic web designing Concept and to have basic knowledge in writing programs using HTML Programming.

COURSE OBJECTIVES

- 1. Understand to inserta graphic within a webpage.
- 2. Describe the concept of link creation in a webpage.
- 3. Describe the procedure to createatablewithinawebpage.
- 4. Demonstrate the use of headinglevelswithinawebpage.
- 5. Classify orderedandunorderedlistswithina webpage.

UNITS

UNIT I: INTRODUCTION TO HTML

(6 HRS)

WebBasics:What isInternet-Webbrowsers-WhatisWebpage --HTMLBasics:Understandingtags.

UNIT II: TAGS (6 HRS)

TagsforDocumentstructure(HTML,Head,Body
Tag).Blockleveltextelements:Headingsparagraph(tag)–Font style
elements:(bold,italic, font,small,strong,strike,bigtags)

UNIT III: LISTS (6 HRS)

Lists:Types of lists:Ordered, Unordered – Nesting Lists – Othertags: Marquee, HR, BR-Using Images – Creating Hyperlinks.

UNIT IV: TABLES (6 HRS)

Tables:CreatingbasicTable,Tableelements,Caption-Tableandcellalignment-Rowspan,Colspan -Cellpadding.

UNIT V: FRAMES (6 HRS)

 $\label{lem:constraint} Frames: Frameset-Targeted Links-Noframe-Forms: Input, Textarea, Select, Option.$

COURSE CONTENTS & LECTURE SCHEDULE:

Modul e No.	Topic	No. of Lectur es	Teachin g Pedago gy	Teachi ng Aids						
	C++ PROGRAMMING LAB									
	UNIT I – INTRODUCTION T	O HTML								
1.1	WebBasics:What is Internet	1	PPT	LCD						
1.2	Web browsers	1	PPT	LCD						
1.3	WhatisWebpage	1	PPT	LCD						
1.4	HTMLBasics:	1	PPT	LCD						
1.5	Understandingtags.	2	Demo & Lab	LCD						
	UNIT II - TAGS									
2.1	TagsforDocumentstructure(HTML,Hea d,Body Tag).	1	РРТ	LCD						
2.2	Blockleveltextelements:	1	PPT	LCD						
2.3	Headingsparagraph(tag)	2	Demo &	LCD						

			Lab	
2.4	Font style elements:(bold,italic, font,small,strong,strike,bigtags	2	PPT	LCD
	UNIT III: LISTS			
3.1	Lists:Types oflists:Ordered, Unordered	1	PPT	LCD
3.2	NestingLists	1	Demo & Lab	LCD
3.3	Othertags:Marquee, HR, BR	1	PPT	LCD
3.4	Using Images	1	Demo & Lab	LCD
3.5	CreatingHyperlinks.	2	PPT	LCD
	UNIT IV: TABLES			
4.1	Tables:Creatingbasic Table	1	PPT	LCD
4.2	Table elements	1	Demo & Lab	LCD
4.3	Caption–Tableandcell alignment	2	PPT	LCD
4.4	Rowspan,Colspan –Cellpadding	2	Demo & Lab	LCD
	UNIT V: FRAMES			
5.1	Frames: Frameset	2	PPT	LCD
5.2	TargetedLinks–Noframe	2	Demo & Lab	LCD
5.3	Forms:Input,Textarea,Select,Option.	2	PPT	LCD

EVALUATION PATTERN

	C1	C2	C3	C4	C5	Total Scholas tic Marks	Non Schola stic Marks C6	CIA Total	% o f
Levels	Т1	Т2	Quiz	Assi gnm ent	OBT/ PPT				Asses sment
	10 Mks.	10 Mks.	5 Mks.	5 Mks	5 Mks	35 Mks.	5 Mks.	40M ks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
кз	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholas tic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA						
Scholastic	35					
Non Scholastic	5					
TOTAL	40					

✓ The levels of CIA Assessment based on Revised Bloom's Taxonomy are:

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC			NON - SCHOLASTIC		MARKS		
C1	C2	СЗ	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSE D
CO 1	Knows the basic concept in HTML conceptof resourcesinHTML	K 1	PSO1, PSO2
CO 2	Usageof Tags in Webpage creation	K1 & K2	PSO1, PSO2,PSO3
CO 3	Understand the page formatting using the concept of list	K1 & K2	PSO3, PSO4
CO 4	Analyze the table creation with its various attributes	K1, K2 & K3	PSO4, PSO5
CO 5	Developa framesand understand its various formats.	K2, K3 & K4	PSO5, PSO6

Mapping COs Consistency with PSOs

CO/PS O	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO1 0
CO1	3	3	1	1	1	1	1	2	1	1
CO2	3	3	3	1	1	1	1	2	1	1
соз	2	2	3	3	1	1	2	2	1	1
CO4	2	2	3	3	1	1	2	2	1	1
CO5	2	2	3	2	3	1	2	2	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4	PO5
CO1	3	1	1	1	1
CO2	1	1	3	1	2
CO3	1	2	1	3	1
CO4	1	1	1	2	1
CO5	1	3	1	1	1

Note:

- ♦ Strongly Correlated **3**
- ♦ Moderately Correlated 2
- ♦ Weakly Correlated -1

COURSE DESIGNER:

2. Staff Name: Ms. MAHESWARI K P

Forwarded By

(S.Selvarani)

HOD'S Signature& Name

I B.C.A

SEMESTER - I

For those who joined in 2023 onwards

PROGRAMM E CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS	CREDITS
USCA	23J1FC	STRUCTURED PROGRAMMING LANGUAGE IN C	FOUNDATION COURSE - THEORY	2	2

COURSE DESCRIPTION

To get better understanding in Programming concepts in C.

COURSE OBJECTIVES

- 1. TofamiliarizethestudentswiththeProgrammingbasicsandthefundamenta lsof C
- 2. DatatypesinC, Mathematical and logical operations.
- 3. Tounderstandtheconceptusingifstatementsandloops
- 4. ThisunitcoverstheconceptofArrays
- 5. ThisunitcoverstheconceptofFunctions
- 6. Tounderstandtheconceptofimplementingpointers.

UNITS

UNIT I: OVERVIEW OF C (6 HRS)

ImportanceofC – sampleCprogram – Cprogramstructure – executingCprogram – Constants – Variables and Data Types: Character set – Ctokens – keywordsandidentifiers – constants – variables – datatypes – declarationofvariables – Assigningvaluestovariables – Assignmentstatement – declaringavariableasconstant – asvolatile – OperatorsandExpression.

UNIT II:DECISION MAKING AND BRANCHING(6 HRS)

Decision making with If -simpleIF,IFELSE,nestedIFELSE,ELSEIFladder - switch,GOTOstatement - DecisionMakingand Looping - While,

Do-While, For, Jumpsinloops.

UNIT III: ARRAYS

(6 HRS)

Declarationandaccessingofone&two – dimensionalarrays –initializingtwo – dimensionalarrays – multidimensionalarrays.

UNIT IV: FUNCTIONS

(6 HRS)

The form of C functions – Return values and types – calling a function – categories of functions – Nested functions – Recursion – functionswitharrays – callbyvalue – callbyreference – storageclasses – characterarraysandstringfunctions.

UNIT V: POINTERS

(6 HRS)

Definition – declaringandinitializing pointers – accessing avariable through address and through pointer – pointer expressions – pointer increments and scale factor – pointers and arrays – pointers and functions – pointers and structures.

TextBook

1.

E.Balagurusamy, Programming in ANSIC, Fifth Edition, Tata McGraw-Hill, 201

ReferenceBooks

- 1. ByronGottfried,Schaum'sOutlineProgrammingwithC,FourthEdition, TataMcGraw-Hill,2018.
- 2. KernighanandRitchie,TheCProgrammingLanguage,SecondEdition,Prentice Hall, 1998
- 3. YashavantKanetkar,LetUsC,EighteenthEdition,BPBPublications,2021

Web Resources:

- 1. https://codeforwin.org/
- 2. https://www.geeksforgeeks.org/c-programming-language/

- 3. http://en.cppreference.com/w/c
- 4. http://learn-c.org/
- 5. https://www.cprogramming.com/

COURSE CONTENTS & LECTURE SCHEDULE:

Modul e No.	Topic	No. of Lecture s	To Pe
	IN C		
	UNIT I: OVERVIEW OF C		
1.1	ImportanceofC – SampleC program	1	C
1.2	Cprogramstructure – ExecutingCprogram	1	C
1.3	Constants, Variables and Data Types: Character Set, Ctokens,keywordsandidentifiers, constants	1	I
1.4	variables,datatypes,declarationofvariables,	1	I
1.5	Assigningvaluestovariables-Assignmentstatement,	1	I
1.6	declaringavariableasconstant,asvolatile.OperatorsandExpression .	1	D:
	UNIT-IIDECISION MAKING AND BRANCHI	NG	
2.1	Decision making with If,simpleIF	1	C
2.2	IFELSE,nestedIFELSE,ELSEIFladder	1	C
2.3	switch,GOTOstatement.	1	I

2.4	DecisionMakingand Looping: While	1	I
2.5	Do-While, For	1	I
2.6	Jumpsinloops	1	D:
	UNIT -IIIARRAYS		
3.1	Declaration of one&two – dimensionalarrays	1	C
3.2	Accessingofone&two – dimensional arrays	1	C
3.3	initializingtwo-dimensional arrays	2	I
3.4	Multidimensionalarrays.	2	I
4.1	The form of C functions, Return values and types	1	C
4.2	calling a function, categories of functions, Nested functions,	1	C
4.3	Recursion,functionswith arrays	1	I
4.4	Callbyvalue	1	I
4.5	Callby reference	1	I
4.6	storageclasses-characterarraysandstringfunctions	1	D:
	UNIT -VPOINTERS		
5.1	Definition, declaring pointers	1	

5.2	Initializing pointers	1	C
5.3	Accessingavariablethroughaddressandthroughpointer,	1	I
5.4	pointer expressions, pointer increments and scale factor	1	I
5.5	pointers and arrays, pointers and functions	1	I
5.6	pointers and structures.	1	D:

EVALUATION PATTERN

	C1	C2	СЗ	C4	C5	Total Scholas tic Marks	Non Schola stic Marks C6	CIA Total	% of
Levels	Т1	Т2	Quiz	Assi gnm ent	OBT/ PPT				Asses sment
	10 Mks.	10 Mks.	5 Mks.	5 Mks	5 Mks	35 Mks.	5 Mks.	40M ks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
кз	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholas tic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA						
Scholastic	35					
Non Scholastic	5					
TOTAL	40					

✓ The levels of CIA Assessment based on Revised Bloom's Taxonomy are:

K1- Remember, K2-Understand, K3-Apply, K4-Analyse

	SCHOLASTIC			NON - SCHOLASTIC		MARKS		
C1	C2	СЗ	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWL EDGE LEVEL (ACCOR DING TO REVISE D BLOOM' S TAXON OMY)	PSOs ADDRE SSED	
CO 1	RemembertheprogramstructureofCwithitssy ntaxandsemantics	K1 & K2	PSO1, PSO2	
CO 2	UnderstandtheprogrammingprinciplesinC(dat atypes, operators, branching and looping, arrays,functions,structures, pointersandfiles)	K1 & K2	PSO1, PSO2,P SO3	
CO 3	Applytheprogrammingprincipleslearntinreal-ti meproblems	K1, K2, K3 & K4	PSO3, PSO4	
CO 4	Analyzethevariousmethodsofsolvingaprobl emandchoosethebestmethod	K1, K2 &	PSO3, PSO4	

		К3	
CO 5	Code, debugand test the programs with appropriate Test cases	K1, K3 & K4	PSO3, PSO5

Mapping COs Consistency with PSOs

CO/PS O	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO1 0
CO1	3	3	1	1	1	1	1	2	1	1
CO2	3	3	3	1	1	1	1	2	1	1
соз	2	2	3	3	1	1	2	2	1	1
CO4	2	2	3	3	1	1	2	2	1	1
CO5	2	2	3	2	3	1	2	2	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	РО3	PO4	PO5
CO1	3	1	1	1	1
CO2	1	1	3	1	2
CO3	1	2	1	3	1
CO4	1	1	1	2	1
CO5	1	3	1	1	1

Note:

- ◆ Strongly Correlated **3**
- ♦ ModeratelyCorrelated **-2**
- ♦ WeaklyCorrelated -1

COURSE DESIGNER:

1. Staff Name: Ms. SELVARANI S

Forwarded By

(S.Selvarani)

HOD'S Signature& Name