VIVEKANANDHA **COLLEGE OF ARTS AND SCIENCES FOR WOMEN** ELAYAMPALAYAM, TIRUCHENGODE (Tk.), NAMAKKAL (Dt.). (Affiliated to Periyar University, Approved by AICTE & Re-Accredited with A Grade by NAAC) Recognized under section 2(f) and 12(B) Under UGC Act, 1956 Α Т \bigcap **DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS** Ν **B.Sc. INFORMATION TECHNOLOGY** \bigcap SYLLABUS & REGULATIONS M \bigcap FOR CANDIDATES ADMITTED FROM 2021-22 **ONWARDS UNDER AUTONOMOUS & OBE PATTERN** S VIVEKANANDHA EDUCATIONAL INSTITUTIONS **Angammal Educational Trust** Elayampalayam, Tiruchengode (Tk.), Namakkal (Dt.)

VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS) B.Sc (INFORMATION TECHNOLOGY) (Candidates admitted from 2021-2022 onwards)

REGULATIONS

I. SCOPE OF THE PROGRAMME

Bachelor of Information Technology can be considered to be one of the most prominent UG level programs in our country. This program mainly deals with the development of computer applications for the purpose of updating computer programming languages. B.Sc.[IT] also aims at creating strong knowledge of theoretical Information Technology subjects who can be employed in software development and testing units of industries. The course has a time period of 3 years with 6 semesters.

II. SALIENT FEATURES

- Regular conduct of guest lectures and seminars
- Campus recruitment
- Provides facilities such as Internet Access and In-House Library
- Provides Career Guidance for Post Graduate Courses like M.Sc, and the Certifications in programming languages
- Conduct of Personality Development Program
- Visiting Faculties from Industries

III. OBJECTIVES OF THE PROGRAMME

The Course Objective of the B.Sc. Information Technology program is to provide advanced and in-depth knowledge of Information Technology and its applications to enable students pursue a professional career in Information and Communication Technology in related industry, business and research. The course designed to impact professional knowledge and practical skills to the students.

IV. ELIGIBILITY FOR ADMISSION

A Candidates seeking admission to the first year Degree course (B.Sc. Information Technology) shall be required to have passed Higher Secondary Examination with Mathematics or Business

Mathematics or Computer Science or Computer Applications or Computer Technology or Statistics (Academic Stream or Vocational Stream) as one of the subject under Higher Secondary Board of Examination, conducted by the Government of Tamilnadu or an examination accepted as equivalent thereto by the syndicate, subject to such conditions as may be prescribed thereto are permitted to appear and qualify for the B.Sc. Information Technology Degree Examination of Periyar University after a course of study of three academic years.

V. DURATION OF THE PROGRAMME

- The course shall extend over a period of three academic years consisting of six semesters. Each academic year will be divided into two semesters. The First semester will consist of the period from July to November and the Second semester from December to April.
- The subjects of the study shall be in accordance with the syllabus prescribed from time to time by the Board of Studies of Vivekanandha College of Arts and Sciences for Women with the approval of Periyar University.

VI. CONTINUOUS INTERNAL ASSESSMENT (CIA)

The performance of the students will be assessed continuously and the Internal

ASSESSMENT MARKS FOR THEORY PAPERS WILL BE AS UNDER:

1	Average of Two Tests		-	05
2	Model Exam		-	10
3	Assignment		-	05
4	Attendance		-	05
		То	-	25

ASSESSMENT MARKS FOR PRACTICAL PAPERS WILL BE AS UNDER:

1	Model Exam		-	20
2	Observation Note		-	10
3	Attendance		-	10
		То	-	40

PASSING MINIMUM - EXTERNAL

THEORY	In the End Semester Examinations, the passing minimum shall be 40%
THEORY	out of 75 Marks. (30 Marks)
PRACTICAL /	In the End Semester Examinations, the passing minimum shall be 40%
MINI PROJECT	out of 60 Marks. (24 Marks)

VII. ELIGIBILITY FOR EXAMINATION

A candidate will be permitted to appear for the University Examination only on learning 75 % of attendance and only when her conduct has been satisfactory. It shall be open to grant exemption to a candidate for valid reasons subject to conditions prescribed.

ATTENDANCE	MARKS					
PERCENTAGE	THEORY	PRACTICAL				
75-80	1	2				
81-85	2	4				
86-90	3	6				
91-95	4	8				
96-100	5	10				

DISTRIBUTION OF MARKS FOR ATTENDANCE:

VIII. CLASSIFICATION OF SUCCESSFUL CANDIDATES

Successful candidates passing the Examination of Core Courses (Main & Allied Subjects) & Securing Marks.

- a) 75 % and above shall be declared to have passed the examination in First Class with Distinction provided they pass all the examinations prescribed for the course at first appearance itself.
- b) 60% and above but below 75 % shall be declared to have passed the Examinations in First Class..
- c) 50% & above but below 60% shall be declared to have passed the examinations in Second Class.
- d) All the remaining successful candidates shall be declared to have passed the examinations in Third Class.
- e) Candidates who pass all the examinations prescribed for the course at the First appearance itself and within a period of three Consecutive Academic years from the year of admission only will be eligible for University Rank.

IX. ELIGIBILITY FOR AWARD OF THE DEGREE

A candidate shall be eligible for the award of the Degree only if she has undergone the above Degree for a period of not less than Three Academic years comprising of six semesters and passed the Examinations prescribed and fulfilled such conditions has have been prescribed therefore.

X. PROCEDURE IN THE EVENT OF FAILURE

If a candidate fails in a particular subject, she may reappear for the university examination in the concerned subject in subsequent semesters and shall pass the examination.

XI. COMMENCEMENT OF THESE REGULATIONS

These regulations shall take effect from the academic year 2021-2022 (i.e.,) for the students who are to be admitted to the First year of the course during the Academic year 2021-22 and thereafter.

XII. TRANSITORY PROVISIONS

Candidates who were admitted to the UG course of study before 2018-2019 shall be permitted to appear for the examinations under those regulations for the period of Three years ie., upto and inclusive of the Examinations of 2021-2022. Thereafter, they will be permitted to appear for the examinations only under the regulations then in force.

EVALUATION OF EXTERNAL EXAMINATIONS (EE)

QUESTION PAPER PATTERN – Theory					
Time	Time duration: 3 Hours Max.				
PART- A: (20 x 1= 20)	Answer all the Questions Four Questions from each Unit				
PART- B: (5 x 5 = 25)	Answer all the questions One Question from each Unit (Either or Type)				
PART- C: (3 x 10 = 30)	Answer any THREE of the questions One Question from each Unit (3 Out of 5)				
IN THE END SEMESTER EXAMINATIONS, THE PASSING MINIMUM SHALL BE 40% OUT OF 75 MARKS. (30 MARKS)					

QUESTION PAPER PATTERN – Practical

Time duration: 3 Hours	Max. Marks: 60			
1. One compulsory question from the given list of objectives	30 Marks			
2. One either/or type question from the given list of objectives	30 Marks			
IN THE END SEMESTER EXAMINATIONS. THE PASSING MINIMUM SHALL BE				

40% OUT OF 60 MARKS. (24 MARKS)

B.Sc IT CURRICULUM FOR ACADEMIC YEAR 2021 – 2022

COURSE PATTERN AND SCHEME OF EXAMINATIONS UNDER AUTONOMOUS, CBCS & OBE PATTERN

FOR THE CANDIDATES ADMITTED FROM THE YEAR 2021 – 2022 SEMESTER: I & II

SEM	PART COURSE COURSE TITLE		Hrs	CRE	MARKS			
SEN	CODE COURSE IIILE				DIT	CIA	EE	тот
	I 18U1LT01 Tamil – I				3	25	75	100
	Π	17U1LE01B	English – I	6	3	25	75	100
	III	18U1MAA03	Allied – I: Numerical Methods	4	4	25	75	100
I	III	21U1ITC01	Core: I Programming in C	4	4	25	75	100
1	III	21U1ITCP01	Practical – I: Programming in C Lab	4	4	40	60	100
	III	21U1ITCP02	Practical –II: Office Automation Lab	4	3	40	60	100
	IV	18U1VE01	Value Education	2	2	25	75	100
			Total	30	23	205	495	700
	Ι	18U2LT02	Tamil – II	6	3	25	75	100
	Π	18U2LE02B	English – II	6	3	25	75	100
	III	18U2MAA06	Allied – II: Discrete Mathematics	4	4	25	75	100
	III	21U2ITC02	Core: II Programming in C++	4	4	25	75	100
П	III	21U2ITCP03	Practical – III: Programming in C++ Lab	4	3	40	60	100
	III	21U2ITC03	Core: III Data Structures and Algorithms	4	4	25	75	100
	IV	18U2ES01	Environmental Studies	2	2	25	75	100
			Total	30	23	190	510	700

CEM	D4	Course	COLDEE TITLE	II	CRE]	MARK	S
SEM	Part	Code	COURSE TITLE	Hrs	DIT	CIA	EE	TOT
	III	18U3CMA03	Allied – III: Financial Accounting	4	4	25	75	100
	III	21U3ITC04	Core: IV Java Programming	5	4	25	75	100
	III	21U3ITC05	Core: V Operating Systems	5	4	25	75	100
	III	21U3ITC06	Core: VI Computer Networks	4	4	25	75	100
Ш	III	21U3ITCP04	Practical- IV: Java Programming Lab	4	3	40	60	100
	III	21U3ITCP05	Practical: V HTML & Web Designing Lab	2	2	40	60	100
	IV	21U3ITS01	SBEC:I HTML & Web Designing	2	2	25	75	100
	IV		NMEC – I:	2	2	25	75	100
	Library & Sports				0	-	-	-
			30	25	230	570	800	
	III	18U4CMA04	Allied – IV: Cost & Management Accounting	4	4	25	75	100
	III	21U4ITC07	Core: VII Relational Database Management System	5	4	25	75	100
	III	21U4ITC08	Core: VIII Software Engineering	4	3	25	75	100
	III	21U4ITC09	Core: IX R Programming	4	3	25	75	100
IV	III	21U4ITCP06	Practical: VI Relational Database Management System Lab	4	3	40	60	100
	III	21U4ITCP07	21U4ITCP07 Practical: VII R Programming Lab			40	60	100
	III	21U4ITS02	2 SBEC:II Internet of Things		2	25	75	100
	IV		NMEC – II	2	2	25	75	100
			Library & Sports	2	0	-	-	-
	Total				24	230	570	800

SEMESTER: III & IV

SEM	Part COURSE COURSE COURSE TITLE		Hrs	CRE	MARKS			
SEIVI	rari	CODE	COURSE IIILE	пгѕ	DIT	CIA	EE	ТОТ
	III	21U5ITC10	Core: X .Net Programming	5	4	25	75	100
	III	21U5ITC11	Core: XI PHP Programming	5	4	25	75	100
	III	21U5ITE	Elective – I	5	3	25	75	100
	III	21U5ITCP08	Practical: VIII . Net Programming Lab	4	3	40	60	100
v	III	21U5ITCP09	Practical: IX PHP Programming Lab	5	3	40	60	100
	III	21U5ITCPR01	PROJECT – I: Project Work-I (In - House Project)	4	3	40	60	100
	IV	21U5ITS03	SBEC: III Data Analysis using Excel	2	2	25	75	100
			Total	30	22	220	480	700
	III	21U6ITC12	Core: XII Python Programming	5	4	25	75	100
	III	21U6ITC13	Core: XIII Mobile Application Development	5	4	25	75	100
	III	21U6ITE	Elective – II	5	3	25	75	100
	III	21U6ITCP10	Practical – X Mobile Application Development Lab	5	3	40	60	100
VI	III	21U6ITCP11	Practical: XI Python Programming Lab	4	3	40	60	100
	III	21U6ITCPR02	PROJECT – II: Project Work	4	3	40	60	100
	IV	21U6ITS04	SBEC: IV: Desktop Publishing	2	2	25	75	100
	V	21U6EX01	Extension Activities	-	1	-	-	-
			Total	30	23	220	480	700
			Grand Total	180	140	1295	3105	4400

SEMESTER: V & VI

	ELECTIV	E – I	ELECTIVE – II				
Semester	Course Code	Title	Semester	Course Code	Title		
	21U5ITE01	Information security		21U6ITE04	Machine Learning		
V	21U5ITE02	Cloud Computing	VI	21U6ITE05	Block Chain Technologies		
	21U5ITE03	Web Technology		21U6ITE06	Big Data Analytics		



MEN EMPOWERMEN	Enayampanayam, Tiruchengode-057 205.								
Programme	B.Sc	Programme Code		UIT Regulations			UI		2021-2022
Department	Inform	ation Technology		Semester		Semester			1
			Per	riod	s	Credit	Maxim	um Mar	ks
Course Code	c c	Course Name	per	Wee	ek				
			L	Т	Р	С	CA	ESE	E Total
21U1ITC01	Pro	Programming in C 4 0 0 4 25 75					100		
COURSE	This subject is to	provide the students a stron	g foun	dati	on o	n programmir	ng concepts	s and its	application. It
OBJECTIVES	also enables the	students to solve problems u	sing pi	rogr	amn	able logic			
POs		PRO	GRAM	ÍME	EOU	TCOME			
PO 1	Apply the knowl	edge of mathematics, scienc	e and o	com	puti	ng in the core	informatio	n techno	ologies
PO 2	Build software s	stems and apply the technol	logies	in v	ariou	us fields of Co	mputer Te	chnolog	gy, including
	hardware probler	ns, Web site development a	nd mar	nage	men	t, databases, a	nd softwar	re engin	eering
	techniques.								
PO 3		ent and evaluate a computer-	based a	syst	em t	o meet the des	sired needs	within	the realistic
	constraints.								
PO 4		e and indulge in research usi	-			-	e and meth	ods to d	esign new
	-	lyze, and interpret data to dr							
PO 5		current techniques, skills, an				ary for compu	iting practi	ce and i	ntegrate
		ns into the user environment				141 1		•	1
PO 6	profession practi	l knowledge to assess profes	sionai,	, ieg	ai, n	eann, social a	na cultural	issues (uuring
PO 7		l and global impact of comp	uting	n ir	divi	duale organiz	ations and	lsociety	7
PO 8		nciples and responsibilities					auons, and	i society	
PO 9		rely as a team member or a l	-	-			on goal in	a multic	lisciplinary team
PO 10						-	-		
	Communicate effectively with a range of audiences using a range of modalities including written, oral and graphical.				,				
PO 11 Apply the knowledge of technology and management principles to manage projects effectively in				ely in diverse					
	environments as a member or a leader in the team.								
PO 12	Engage in indepe	endent and life-long learning	for co	ontin	ued	professional d	levelopme	nt.	
PO 13	Ability to unders	tand and analyze a given rea	ıl-time	pro	blen	ns and propose	e feasible c	omputi	ng solutions.
PO 14	Evaluate and use	appropriate tools and techn	iques i	n de	velc	ping applicati	on activiti	es.	
PO 15	Updating themse	lves through e-learning and	self-st	udy	cou	rses.			

COs	COURSE OUTCOME				
CO 1	o interpret the basic elements like variables, data types and operators in C Language				
CO 2	2 To implement the C Program Decision making and Branching Statements				
CO 3	Execute Character Arrays and Strings by using String handling functions and User defined functions in C				
	Language				
CO 4	Organize Structures, Unions and Pointers in C Language				
CO 5	Generate Array of Pointers and Files in C Language				
Pre-requisites	Basic Computer Knowledge				

Knowledge Levels

1. Remembering, 2. Understanding, 3. Applying, 4. Analyzing, 5. Evaluating, 6. Synthesizing

		(3/2/	1 indic	ates the) / KL N prrelatio		-	?-mediu	m 1-we	eak)				
CO	COs KLs							lation, 3-strong, 2-medium, 1-w POs					KI	LS		
									PO	1			1			
CO	1				2				PO	2			2			
									PO	3			6	i		
									PO 4	4			5	, 		
CO	2				3				PO :	5			3			
		PO 6 5														
		PO 7 4														
CO	3				3				POS		6					
					PO 9											
						PO 10					6					
CO 4					4				PO 1				6			
									PO 1				5			
CO	5		6						PO 1				6			
CO	3				0			PO 14 PO 15					6 5			
						<u>CO /</u>	PO Ma	nning	101	5						
		(3/2)	1 indic	ates the	streng				rong 🤈	2-mediu	m 1-we	eak)				
		(0, 1,			~8		rogram		-		,)				
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO2	1	2	1	1	3	1	2						1	1	1	
CO3	1	2	1	1	3	1	2 1 1 1 1 1 1 1						1	1		
CO4	1	1	1	2	2	2	1	1	1	1	1	2 1 1 2				
CO5	1	1	3	2	1	2	1	3	3	3	3	2	3	3	2	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus									
	Overview of C	Periods	10							
Unit - I	History - Importance - Basic structure of C programs. Constants, variables and data types - Operators and									
Unit - I	-Type conversions in expressions - Operator precedence and associativity.									
	Branching and Looping	Periods	10							
Unit - II	- II Decision making and branching - Decision making and looping- Arrays: Definition & Declaration - Types -									
	Dynamic arrays.									
	Arrays and Strings	Periods	10							
Unit - III	Character arrays and strings- User - Defined functions- Elements - Definition of functions - Return values									
Unit - III	and their types - Function calls - Function declaration - Categories of Fun	ctions.								
	Structures and Unions	Periods	10							
Unit - IV	Understanding pointers - Accessing the address of a variable - Initializing	of pointer variab	les. Chain of							
Unit - IV	Pointers - Arrays of pointers - Pointers as function arguments - Pointer an	d structures.								
	File Management	Periods	10							
Unit - V	I/O operation on files - Error handling during I/O operations -Dynamic M	emory Allocation	and Linked List							
Unit - v	- Malloc - Calloc - Free - Realloc -Linked list: Concept - Types- Advanta	ges- Creating a lir	ıked list -							
Applications										
	Total Periods		50							

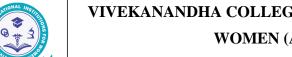
Text Books	
1	"Programming in ANSI C", E. Balgurusamy Tata McGraw Hill, New Delhi, 4th Edition
References	
1	"C: The Complete Reference", Herbert Schildt, Mc Graw Hill, New Delhi, 4th Edition
2	"Programming In C", B.L.JUNEJA, Cengage Learning India
3	"Programming In ANSI C", E. Balagurusamy TMG Hill, New Delhi, 5th Edition.
E-References	
1	https://www.programiz.com/c-programming
2	https://www.tutorialspoint.com/cprogramming/index.htm
3	https://en.wikipedia.org/wiki/C_(programming_language)
4	https://www.geeksforgeeks.org/c-programming-language/

S PHONY	AL INSTITUTIONS FOR	VIVEKAN	VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS)								
WOMEN EM	992 * NANOT		Elayampalayam, Ti	iruche	ngo	de-6	37 205.				CRITINED BANK SUPERITY
Progr	amme	B.Sc	Programme Code			U	IT	Regulat	ions	2	2021-2022
Depa	Department Information Technology						Semester				1
							Credit	Maxim	um Mar	rks	
Cours	e Code	Course Name			We	eek P	С	СА	ESF	7	Total
		Pro	gramming in C Lab	L 0	Т 0	P 4	3	40	60 ESE		100
21U1	ITCP01	,	8			1 -	-				
List of l	Experime	nts									
1	1 Write a c program to Swap two numbers without using third Number.										
2	Write a c program to print multiplication of 2 matrices.										
3	Wr	ite a c program	to convert decimal nur	nber t	to t	oinar	y.				
4	Wr	ite a c program	to reverse given numb	er usi	ng	for l	oop.				
5	C p	rogram to find	sum of array elements	using	D	ynan	nic Memory	Allocati	on.		
6	Wri	ite a program f	or accessing union men	nbers.							
7	Wri	ite a program f	or access data members	s of a	strı	uctu	re using a st	ruct varia	able.		
8	C P	rogram to crea	te, initialize, assign and	l acce	SS a	a po	inter variabl	le.			
9	Wr	Write a c program for copy one file to another file.									
10	Wr	ite a c program	to Employee record sy	stem	usi	ng f	ile.				

CONTRACTOR	VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS)													
WOMEN EMPOWERMENT		Elayampalayam, Ti	yam, Tiruchengode-637 205. ode UIT Regulations 2021-202											
Programme	B.Sc	Programme Code		U	IT	Regulat	tions	2021-2022						
Department	Inform	ation Technology			Semester			1						
			Peri		Credit	Maxim	um Mar	ks						
Course Code	(Course Name	per V		С	СА	ESE	E Total						
21U1ITCP02	Off	ice Automation lab	0) 2	2	40	60	100						
List of Experim	ents													
		MS	Word											
² Orient ₃ Prepar	 Set the paper size A4 and orientation of the paper to Portrait. Make the titles to Center, Bold, Font size 20 and style in Arial. Justify the entire Text. Set the margin left 1 . 5, Right 1 . 5, Top and Bottom5 Use Drop Cap in 1st paragraph 1st character for 3 lines. Change the font size of the text to 12 size. Use bulleted list and Highlight the important sentences. Insert a picture, word art, Header and Footer. Save the file. 2 Enhance the documents using Header, Footer, Page Setup, Border, Page number, watermarking, Orientation and Print Preview. 3 Prepare a student bio – data. 													
⁵ Colleg	 e using Ms. Ex (Things to be C) Enter T Enter t styles. Enter T Enter T Enter T Enter T Centre Insert a Delete Insert a In the S 	Two Titles he 1st and 2ndTitles in the Roll No., Name, etc as F he Roll Number using F 10 students particulars. the Titles. a New Row between 5the New Student's particular the Last row. a New Column between Sex column enter Sex = all the Data in Centre.	Name, first an field na fill Har and 6 lars in 3rdt a	Com d sec imes. idle. thRov the no	munity, DO ond rows w w . ew Row.	B, Age, .	Addres	ss, & 10th						

A CONTRACT OF CONTRACT.	LINE INSTITUTE TO BE TO	VIVEKAN		WON	LLEGE IEN (Al alayam, T	UT	ONO	MO	<i>,</i>	NCES F(OR		ISO 9001-2008 Residentiand ISO 9001-2008 Methods com. Is 9105016407
Prog	ramme	B.Sc	Pı	rogramme	Code			U	T	Regulat	tions	2	2021-2022
Depa	artment	Inform	ation T	echnolog	у					1			
Cours	se Code	C	Course N	Jame			Periods Credit per Week			Maximum Mar			
]	L T P C CA				ESI	E	Total
21U1	ITCP02	Off	ice Auto	omation la	ıb		0 0	2	2	40	60		100
6	 Create a worksheet, moving/ copying/ inserting/ deleting rows and columns (usage of cut, paste, commands, copying a single cell, copying a range of data, filling up a cell. Undo command, inserting a row, column, deleting rows and columns). Formatting worksheets Bold, Italic, Font size changing, Auto fill, date format, Currency format. 												
7	S. N	Name M1 M2 M3 M4 M5 Total Avg Result Grade v S.No, Name, marks for 10 students											
	ii. Find iii. Find	total and avera d Result whether rt a column ch	age usi er the s	ing form student i	ula. s pass o								
8	ii. Assi	ing and runnin gning button to ting a macro.			cro.								
	•	-		MS. I	Powerpo	oint	t Pres	senta	tion				
9													
10	10 Create a presentation with apply background/Themes, apply custom animation on text, insert images/word art and animate the images with effects.												
11	a. Use o time.	a presentation custom animati proper transitic	ion op	tion to a	nimate t		text; t	he te	xt must mov	ve left to	right	one	line at a

A CONTRACTOR		VIVEKAN	ANDHA COLLEGE WOMEN (A)	UTON	ОМО	US)	NCES F(OR	TÜVRA	heinand TIFIED ISO 9001-2008	
NOMEN EL	MPOWERWENT	B.Sc	Elayampalayam, T	iruchen	-		Deculo		20	021-2022	
	ramme		Programme Code		U	IT Semester	Regulat	lons			
Depa						1					
Cours	se Code	C	Course Name	-	iods Veek	Credit	Maxim	um Mai	rks		
			L T P		С	CA	ESI	E	Total		
21U1	ITCP02	P02 Office Automation lab 0 0 2 2 40 60							100		
			Ms	Access	5						
12.	a. At le mark2, b. The number c. Enter d. Use	mark3, mark4, data types are, r. Roll number r data in the tab query for sortin	amed "mark sheet" with total" student name: text, rol must be the primary ke ole. The total must be c ng the table according	l numb ey. ealculat	er: nu ed usi	mber, mark	l to mark uery.	4: nur	nber,	, total:	
13.	 With addition to the table above, a. Add an additional field "result" to the "mark sheet" table. b. Enter data for at least 10 students c. Calculate the result for all the students using update queries, if total>=200, then pass, else fail. d. Search the students, whose name starts with "sh". e. Show the names and total marks of the students who have passed the examination. 										
14.	Create	a employee per	rsonal information usir	ng MS -	- Acce	ess					





MEN EMPOWERME		Elayampalayam, 11 uchengode-057 205.										
Programme	B.Sc	Programme Code			U	IT	Regula	tions	2021-2022			
Department	Inform	ation Technology				Semester			2			
			Per	iods		Credit	Maxim	um Ma	rks			
Course Code	c c	ourse Name	per V	Weel	k							
			- T		Р	С	CA	ESI	E Total			
	Progr	amming in C++	5		0		25	75	100			
21U2ITC02												
COURSE	To learn the basi	To learn the basic concepts of object oriented programming & the syntax of C++ language. To impart the										
OBJECTIVES	programming ski	lls C++ and the concepts of	Object	Orie	ente	ed Software De	evelopmer	nt Life (Cycle and about			
	Unified Modelin	g Language.										
POs		PRO	GRAM	ME	OU	JTCOME						
PO 1	Apply the knowl	edge of mathematics, scienc	e and c	omp	uti	ng in the core	informatio	on techn	ologies			
PO 2	Build software sy	Build software systems and apply the technologies in various fields of Computer Technology, including										
	hardware probler	ns, Web site development a	ıd man	ager	nen	it, databases, a	nd softwa	re engin	eering			
	techniques.											
PO 3	Design, implement and evaluate a computer-based system to meet the desired needs within the realistic											
	constraints.											
PO 4		and indulge in research usi	•			-	and meth	ods to c	lesign new			
DO 5	-	lyze, and interpret data to dr					··	1				
PO 5		current techniques, skills, and sinto the user environment				ary for compu	ting practi	ce and	integrate			
PO 6		knowledge to assess profes				ealth social a	nd cultural	iccupe	during			
100	profession practi		sionai,	iegu	.1, 11	icanii, sociai ai	ia cuitarai	135005	during			
PO 7		and global impact of comp	uting o	n inc	livi	duals, organiz	ations, and	d societ	у.			
PO 8	-	nciples and responsibilities	-			-	,	•	, 			
PO 9	Function effectiv	ely as a team member or a l	eader to	o acc	om	plish a commo	on goal in	a multi	disciplinary			
	team.											
PO 10	Communicate eff	ectively with a range of auc	iences	usin	g a	range of moda	lities incl	uding w	ritten, oral and			
	graphical.											
PO 11		edge of technology and man	-	nt pr	inc	iples to manag	e projects	effectiv	vely in diverse			
		a member or a leader in the										
PO 12		ndent and life-long learning				-						
PO 13	-	tand and analyze a given rea		-				-	ng solutions.			
PO 14		appropriate tools and techn	-				on activiti	es.				
PO 15	opdating themse	lves through e-learning and	sen-stu	iay c	ou	ises.						

COs	COURSE OUTCOME
CO 1	Distinguish between Structured and Object Oriented problem solving approaches and apply them based on
	the problem given
CO 2	Identify classes and objects from the given problem description and able to create classes and objects using
	C++
CO 3	Achieve code reusability and extensibility by means of Inheritance and Polymorphism.
CO 4	Understand the complexity of Industrial Strength Software and the application of Unified Process Model.
CO 5	
Pre-requisites	

Knowledge Levels 1. Remembering, 2. Understanding, 3. Applying, 4. Analyzing, 5. Evaluating, 6. Synthesizing CO / PO / KL Mapping (3/2/1 indicates the strength of correlation, 3-strong, 2-medium, 1-weak) COs KLs POs KLs PO 1 CO 1 PO 2 PO 3 PO 4 CO 2 PO 5 PO 6 PO 7 PO 8 CO 3 **PO 9** PO 10 CO 4 PO 11 PO 12 PO 13 CO 5 PO 14 PO 15 CO / PO Mapping (3/2/1 indicates the strength of correlation, 3-strong, 2-medium, 1-weak) Programme Outcome (POs) COs PO2 PO3 PO4 PO5 PO7 PO8 PO10 PO11 PO12 PO13 PO14 PO15 PO1 PO6 PO9 CO1 CO2 CO3 CO4 CO5

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the	Syllabus									
	Basic Concepts of OOP	Periods	12							
	Basic Concepts of OOP - Benefits of OOP - Applications of OOP -Structure of C++ - Simple programs in									
Unit - I	C++ -Applications of C++ -Tokens- Keywords- Identifiers and Constant-Data types - Variables -									
Unit - I	Operators-Manipulators-Expressions- Control Structures. Functions -The	main function- Pr	ototype- Call by							
	Reference- Return by reference- Inline Functions- Default Arguments- Fu	nction Overloadi	ng.							
	Classes and Objects	Periods	12							
	Classes and Objects - Introduction- Specifying a class - defining a Member Functions - Array with in a									
Unit - II	class- Memory Allocation for Objects- Static data members - Static memb									
	Objects as Function Arguments - Friendly Functions- Returning Objects-	const Member Fu	nctions-							
	Constructors and Destructors. Operator Overloading and type conversions									
	Inheritance:	Periods	12							
	Inheritance: defining a derived class - Derived Classes- single inheritance- Multilevel Inheritance-									
Unit - III	Multiple Inheritance- Hierarchical Inheritance- Hybrid Inheritance- Virtual Base Classes- Abstract Classes									
	Pointers, virtual Functions and Polymorphism: Pointers - Pointers to Objects - these Pointers Virtual									
	Functions - Pure Virtual Functions.									
	Managing I/O Operations:	Periods	12							
Unit - IV	Managing I/O Operations: Streams in C++ - C++ Stream Classes - ur	formatted I/O op	eration-							
onn iv	Formatted Consol I/O Operations - Managing Output with Manipulators									
	Templates:	Periods	12							
Unit - V	Templates: Class templates- Class templates with Multiple Parameters- F	unction templates	- Function							
Unit y	Templates with Multiple Parameters- Member Function Templates.									
	Total Periods		60							

Text Books	
1	1. E.Balagurusamy, "Object-Oriented Programming with C++", Tata McGraw Hill Publishing Company
	Limited, New Delhi ,Second Edition, 2001.
2	2. Bahrami "Object Oriented Systems", McGraw Hill International Edition, 1999.
References	
1	1. Robert Lafore, "Object Oriented Programming in Turbo C++", Galgotia ,2001.
2	2. Herbert Schildt, "Teach Yourself C++", Third Edition. Tata McGraw Hill, 5th Reprint, 2000
3	3. K.R Venu Gopal, Rajkumar, T.Ravishankar, "Mastering C++", TMG Ltd, New Delhi
E-References	
1	1. https://bookstore.github.io/cse/secondyear/Balaguruswamy%20Object%20Oriented%20Programming%2
	0With%20C++%20Fourth%20Edition.pdf
2	2. http://www.ddegjust.ac.in/studymaterial/mca-3/ms-17.pdf
3	3. https://www.scribd.com/doc/272353233/Object-Oriented-Programming-in-C-Balaguruswamy-pdf

SUCHTONAL INSTITUT	VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR										
		WOMEN (AU	JTO	NO	Ю	US)			τΰ	VRheinland IntelLD	
HOMEN EMPOWERMENT	Elayampalayam, Tiruchengode-637 205.										
Programme	Programme B.Sc Programme Code UIT Regulation						tions	2	2021-2022		
Department Information Technology						Semester				2	
			Р	eriod	s	Credit	Maxim	um Mai	rks		
Course Code	Course Code Course Name		per	r We	ek						
		L	Т	Р	С	CA	ESI	Ξ	Total		
21U2ITCP0	Pro	gramming in C++ Lab	+ Lab 0 0 4 3 40 60							100	
List of Experir											
1 Class	Classes and Objects										
2 const	ructors & destru	etors									
3 Inline	Functions										
4 Funct	ion overloading										
5 Opera	ator overloading										
6 Inher	itance (Any Two	Types)									
7 Dyna	mic Polymorphi	sm – Virtual Functions.									
8 Frien	riend Function										
9 Point	ers										
10 Temp	lates										



MEN EMPOWERMEN		Elayampalayam, Ti	ruche	ngo	de-6	37 205.					
Programme	B.Sc	Programme Code			tions	2021-2022					
Department	Inform	ation Technology				Semester			2		
	Periods Credit Maximum Mark										
Course Code	Course Name per Week										
			L	Т	Р	С	CA	ESE	E Total		
	Data Struc	ctures and Algorithms	4	0	0	4	25	75	100		
21U2ITC03	Duiu Struc		<u> </u>	Ŭ	Ŭ	•		15	100		
COURSE	• Understand	and remember algorithms a	nd its a	inaly	sis j	procedure. â€	¢ Introduc	e the co	ncept of data		
OBJECTIVES	structures throug	h ADT including List, Stack	, and	Que	ues.â	쀢 To design	and imple	ement va	arious data		
	structure algorith	nms.• To introduce variou	is tech	niqu	les						
POs		PROGRAMME OUTCOME									
PO 1	Apply the knowl	edge of mathematics, scienc	e and	com	putii	ng in the core	informatic	on techno	ologies		
PO 2	Build software systems and apply the technologies in various fields of Computer Technology, including										
	hardware problems, Web site development and management, databases, and software engineering										
	techniques.										
PO 3	Design, impleme	ent and evaluate a computer-	based	syst	em t	o meet the des	sired needs	s within	the realistic		
	constraints.	constraints.									
PO 4		e and indulge in research usi	-			-	e and meth	ods to d	lesign new		
	-	lyze, and interpret data to di									
PO 5		current techniques, skills, and				ary for compu	iting practi	ice and 1	ntegrate		
PO 6		ns into the user environment l knowledge to assess profes			<u> </u>	aalth againl a	nd aultural	Licence	dumin a		
FUO	profession practi		sionai	, ieg	ai, ii	eann, sociaí a		I Issues (uuring		
PO 7		l and global impact of comp	uting a	on ir	ndivi	duals organiz	ations and	1 society	J		
PO 8	-		-			-	unons, un	<i>a society</i>			
PO 9	Apply ethical principles and responsibilities during professional practice. Function effectively as a team member or a leader to accomplish a common goal in a multidisciplinary										
	team.					1	U		1 2		
PO 10	Communicate effectively with a range of audiences using a range of modalities including written, oral and										
	graphical.										
PO 11	Apply the knowl	edge of technology and man	ageme	ent p	rinc	iples to manag	ge projects	effectiv	ely in diverse		
		a member or a leader in the									
PO 12		endent and life-long learning									
PO 13		stand and analyze a given rea							ng solutions.		
PO 14		appropriate tools and techn					on activiti	es.			
PO 15	Updating themse	elves through e-learning and	self-st	udy	cour	rses.					

COs	COURSE OUTCOME
CO 1	Explain the organization and operations of data structures Stack, Queues, Trees, Graphs, Heaps.
CO 2	Compare and contrast the functionalities and applications of different data structures
CO 3	Demonstrate specific search and sort algorithms using data structures given specific user requirements
CO 4	Apply the operations of data structures in designing software procedures based on specific requirements
CO 5	Assess the applicability of given data structures and associated operations to real time
Pre-requisites	Know about algorithms

					I	Know	ledge	Level	s							
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	5	
		(3/2)	1 indic	ates the				Mappin	-	2-mediu	m 1 w	aak)				
СО	s	(3/2/			KLs			511, 5-51	POs		<u> </u>	<i>a</i> k)	KI	s		
	5								PO				1			
CO	1				5				PO				2			
									PO	3			6	5		
									PO				5			
CO	2				2				PO :				3			
									PO				5			
60	2		1					PO 7 PO 8					4 6			
CO	CO 3		1					PO 9					6			
				PO 10							6					
CO	4		3					PO 11					6			
								PO 12					5			
								PO 13				6				
CO	5		2					PO 14				6				
									PO 1	.5			5	5		
		(2)2	(1 • 1•	1			PO Ma		_		1	1 \				
		(3/2/	1 indic	ates the	streng			me Ou	-	2-mediu	m, 1-we	eak)				
COs	DO1	DO 2	DO2	DO 4	DOS		-				DO11	DO12	DO12	DO14	DO15	
001	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9		PO11	PO12		PO14		
C01	1	1	2	3	1	3	2	2	2	2	2	3	2	2	3	
CO2	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO3	3	2	1	1	1	1	1	1 1 1 1 1 1 1 1 1					1			
CO4	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO5	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus								
	An Introduction to Data Structure:	Periods	12						
Unit - I	Algorithms - Modular Programming - Top-Down Algorithm Design Bottom - Up Algorithm Design -								
Unit - I	Structured Programming - Analysis of Algorithm - Classification of Data Structure - Arrays - Lists.								
	Stack:	12							
Unit - II	Operations Performed on Stack - Stack Implementation - Stack Using Ar	rays - Application	s of Stacks -						
Unit - II	Evaluating Postfix Expression. Queue: Algorithms for Queue Operations - Circular Queue - Deques -								
	Applications of stacks.								
	Linked List:	Periods	12						
	Representation - Advantages and Disadvantages - Operations - Types of linked list - Singly - Doubly -								
Unit - III	circular. Sorting Techniques: Complexity of Sorting Algorithms - Bubble Sort - Insertion Sort - Shell Sort								
	- Quick Sort - Merge Sort - Radix Sort - Heap Sort - External Sorting.								
	Trees:	Periods	12						
Unit - IV	Basic Terminologies - Binary Trees - Representation of Binary tree - Operations - Types of Binary Trees:								
Unit - I v	Binary Search Tree - Expression tree - Balanced Binary Tree - AVL Tree - Applications. Case study: Heap								
	Tree.								
	Graphs:	Periods	12						
Unit - V	Introduction-Graph Terminologies-Representation of Graphs-Operations on Graphs - Breadth first search -								
Unit - v	Depth first search - Applications of Graph: Minimum Spanning Tree - Sh	nortest path. Searc	hing						
	Techniques: Sequential - Binary and Fibonacci search.								
	Total Periods		60						

Text Books	
1	1. Vinu V Das "Principles of Data Structures using C and C++", New Age International Pvt Ltd Publishers,
	New Delhi, 2011.
References	
1	1. Chitra A &Rajan PT, "Data Structures", 2nd Edition, Vijay Nicole Publications, 2016
2	2. Reema Thareja "Data Structures using C" Oxford University Press Second Edition, New Delh, 2014.
3	3. Debasis Samanta "Classical Data structure" 2nd Edition, PHI Learning Private Limited, New Delhi,
	2011.
4	4. M. A. Weiss, "Data Structures and Algorithm Analysis in C", 2nd edition, Pearson Education Asia, 2009.
E-References	
1	1. www.freetechbooks.com/algorithms-and-data-structures-f11.html
2	2. https://sonucgn.files.wordpress.com/2018/01/data-structures-by-d-samantha.pdf

		Signature of	of BOS Chairman	Programme
Department	Information Technology	Semester	2	

		Periods	Credit	Maxim								
Course Code	Course Name	per Week										
		LTP	С	CA	ESE	Total						
21U2ITC03	Data Structures and Algorithms	4 0 0	4	25	75	100						
COURSE	• Understand and remember algorithms ar	nd its analysis	procedure. â€	¢ Introduce	e the conce	pt of data						
OBJECTIVES	structures through ADT including List, Stack	structures through ADT including List, Stack, and Queues.• To design and implement various data										
	structure algorithms.• To introduce variou	is techniques										
POs	PRO	GRAMME OU	JTCOME									
PO 1	Apply the knowledge of mathematics, science	e and computi	ng in the core	informatio	n technolog	gies						
PO 2	Build software systems and apply the technologies in various fields of Computer Technology, including											
	hardware problems, Web site development and management, databases, and software engineering											
	techniques.											
PO 3	Design, implement and evaluate a computer-based system to meet the desired needs within the realistic											
	constraints.											
PO 4	Review literature and indulge in research using research based knowledge and methods to design new											
	experiments, analyze, and interpret data to draw valid conclusions.											
PO 5	Select and apply current techniques, skills, and tools necessary for computing practice and integrate											
	IT-based solutions into the user environment	•										
PO 6	Apply contextual knowledge to assess professional, legal, health, social and cultural issues during											
	profession practice.											
PO 7	Analyze the local and global impact of comp	-		ations, and	l society.							
PO 8	Apply ethical principles and responsibilities		-									
PO 9	Function effectively as a team member or a leader to accomplish a common goal in a multidisciplinary											
DO 10	team.		<u> </u>	1 1	1							
PO 10	Communicate effectively with a range of aud	liences using a	range of moda	alities inclu	uding writte	en, oral and						
DO 11	graphical.		• • •	• .	<u> </u>							
PO 11	Apply the knowledge of technology and man		iples to manag	e projects	effectively	in diverse						
DO 10	environments as a member or a leader in the		<u> </u>									
PO 12	Engage in independent and life-long learning		-	-		-1						
PO 13	Ability to understand and analyze a given rea	-				olutions.						
PO 14	Evaluate and use appropriate tools and techn	-		on activition	es.							
PO 15	Updating themselves through e-learning and	self-study cou	rses.									

COs	COURSE OUTCOME
CO 1	Explain the organization and operations of data structures Stack, Queues, Trees, Graphs, Heaps.
CO 2	Compare and contrast the functionalities and applications of different data structures
CO 3	Demonstrate specific search and sort algorithms using data structures given specific user requirements
CO 4	Apply the operations of data structures in designing software procedures based on specific requirements
CO 5	Assess the applicability of given data structures and associated operations to real time
Pre-requisites	Know about algorithms

					I	Know	ledge	Level	s							
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	5	
		(3/2)	1 indic	ates the				Mappin	-	2-mediu	m 1 w	aak)				
СО	s	(3/2/			KLs			511, 5-51	POs		<u> </u>	<i>a</i> k)	KI	s		
	5								PO				1			
CO	1				5				PO				2			
									PO	3			6	5		
									PO				5			
CO	2				2				PO :				3			
									PO				5			
60	2		1					PO 7 PO 8					4 6			
CO	CO 3		1					PO 9					6			
				PO 10							6					
CO	4		3					PO 11					6			
								PO 12					5			
								PO 13				6				
CO	5		2					PO 14				6				
									PO 1	.5			5	5		
		(2)2	(1 • 1•	1			PO Ma		_		1	1 \				
		(3/2/	1 indic	ates the	streng			me Ou	-	2-mediu	m, 1-we	eak)				
COs	DO1	DO 2	DO2	DO 4	DOS		-				DO11	DO12	DO12	DO14	DO15	
001	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9		PO11	PO12		PO14		
C01	1	1	2	3	1	3	2	2	2	2	2	3	2	2	3	
CO2	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO3	3	2	1	1	1	1	1	1 1 1 1 1 1 1 1 1					1			
CO4	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO5	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus								
	An Introduction to Data Structure:	Periods	12						
II: A	Algorithms - Modular Programming - Top-Down Algorithm Design Bottom - Up Algorithm Design -								
Unit - I	Structured Programming - Analysis of Algorithm - Classification of Data	Structure - Arra	ys - Lists.						
	Stack: Periods								
Unit - II	Operations Performed on Stack - Stack Implementation - Stack Using Ar	rays - Application	s of Stacks -						
Unit - II	Evaluating Postfix Expression. Queue: Algorithms for Queue Operations - Circular Queue - Deques -								
	Applications of stacks.								
	Linked List:	Periods	12						
	Representation - Advantages and Disadvantages - Operations - Types of linked list - Singly - Doubly -								
Unit - III	circular. Sorting Techniques: Complexity of Sorting Algorithms - Bubble Sort - Insertion Sort - Shell Sort								
	- Quick Sort - Merge Sort - Radix Sort - Heap Sort - External Sorting.								
	Trees:	Periods	12						
Unit - IV	Basic Terminologies - Binary Trees - Representation of Binary tree - Operations - Types of Binary Trees:								
Unit - I v	Binary Search Tree - Expression tree - Balanced Binary Tree - AVL Tree - Applications. Case study: Heap								
	Tree.								
	Graphs:	Periods	12						
Unit - V	Introduction-Graph Terminologies-Representation of Graphs-Operations on Graphs - Breadth first search -								
Unit - V	Depth first search - Applications of Graph: Minimum Spanning Tree - Sh	nortest path. Searc	hing						
	Techniques: Sequential - Binary and Fibonacci search.								
	Total Periods		60						

Text Books	
1	1. Vinu V Das "Principles of Data Structures using C and C++", New Age International Pvt Ltd Publishers,
	New Delhi, 2011.
References	
1	1. Chitra A &Rajan PT, "Data Structures", 2nd Edition, Vijay Nicole Publications, 2016
2	2. Reema Thareja "Data Structures using C" Oxford University Press Second Edition, New Delh, 2014.
3	3. Debasis Samanta "Classical Data structure" 2nd Edition, PHI Learning Private Limited, New Delhi,
	2011.
4	4. M. A. Weiss, "Data Structures and Algorithm Analysis in C", 2nd edition, Pearson Education Asia, 2009.
E-References	
1	1. www.freetechbooks.com/algorithms-and-data-structures-f11.html
2	2. https://sonucgn.files.wordpress.com/2018/01/data-structures-by-d-samantha.pdf



MEN EMPOWERME		Elayampalayam, 11	uche	ngo	ue-0	57 203.				
Programme	B.Sc	Programme Code	UIT Regulations					2021-2022		
Department	Inform	ation Technology				Semester			3	
		Periods Credit Maximum Marks								
Course Code	Course Name per Week									
			L	Т	Р	С	CA	ESI	E Total	
	Java	Programming	4	0	0	4	25	75	100	
21U3ITC04		6 6		-	_		_			
COURSE	To know how to	program in the Java progran	nming	lang	guag	eTo develop k	nowledge	of obje	ct-oriented	
OBJECTIVES	paradigm in the J	ava programming language.	Apply	/ and	l use	of Java in a v	ariety of te	echnolo	gies and on	
	different platform	ns.								
POs		PRO	GRAN	/ME	E OU	TCOME				
PO 1	Apply the knowl	edge of mathematics, scienc	e and	com	puti	ng in the core	informatio	n techn	ologies	
PO 2		stems and apply the technol			-	-			-	
	-	ns, Web site development a	-				-			
	techniques.									
PO 3	Design, impleme	nt and evaluate a computer-	based	syst	em t	o meet the des	ired needs	within	the realistic	
	constraints.									
PO 4		and indulge in research using	-			-	e and meth	ods to c	lesign new	
		lyze, and interpret data to dr						1	•	
PO 5		current techniques, skills, ar as into the user environment				ary for compu	ting practi	ce and	integrate	
PO 6		knowledge to assess profes				alth social a	nd cultural	icenae	during	
100	profession practi		sionai	, icg	ai, 11	calui, sociai a	nu cunturai	155005	during	
PO 7		l and global impact of comp	uting	on ir	ndivi	duals, organiz	ations, and	l societ	у.	
PO 8		nciples and responsibilities of	-			-	,	•	<u> </u>	
PO 9	Function effectiv	ely as a team member or a le	eader	to ac	com	plish a commo	on goal in	a multi	disciplinary team	
PO 10	Communicate eff	fectively with a range of aud	iences	s usi	ng a	range of moda	alities inclu	uding w	ritten, oral and	
	graphical.									
PO 11		edge of technology and man	-	ent p	rinc	iples to manag	e projects	effectiv	vely in diverse	
		a member or a leader in the								
PO 12		endent and life-long learning				-				
PO 13		tand and analyze a given rea		-				-	ng solutions.	
PO 14		appropriate tools and techni	-				on activitie	es.		
PO 15	Updating themse	lves through e-learning and	seit-st	udy	cou	rses.				

COs	COURSE OUTCOME
CO 1	Understand and write the program in Java with basic input and output functions
CO 2	To understand the functions, Class and Objects, Inheritance and Packages in Java
CO 3	To understand and apply the exception handling mechanisms in Java
CO 4	To know the concept of JDBC and apply in the program to connect with the Java Program
CO 5	To know and develop Applets and know its use
Pre-requisites	Have an idea on Object Oriented languages such as C++

		Knowledge Levels														
1.Remer	nberi	ng, 2.	Under	stand	ling, 3	S.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizinĮ	g	
		(2/2)						Mappin	-	. 1.		1 \				
COs		(3/2/	1 indic		streng KLs	th of co		on, 3-st	rong, 2 POs	2-mediu	m, 1-we	eak)	KI			
	5				NLS				POS				1			
СО	1				2				PO				2			
					-				PO				6			
									PO	4			5			
CO				3				PO	5			3				
									PO				5			
								PO 7					4			
CO	CO 3			3				PO 8 PO 9				6				
								PO 9 PO 10				6 6				
CO	4		4						PO 1			6				
								PO 12				5				
								PO 13				6				
CO	5				3			PO 14					6			
								PO 15 5								
		(3/2/	1 indic	ates the	streng		PO Ma orrelatio		rong, 2	2-mediu	m, 1-we	eak)				
<u> </u>						Р	rogram	me Ou	tcome ((POs)						
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO2	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO3	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO4	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2	
CO5	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

	Overview of Java Language	Periods	12								
II: A	Introduction - simple java program-Java program structure-Java Tokens-Implementing a Java program										
Unit - I	Constants, variables, Data Types and Operators: Constants-variables-Data Types-Declaration of										
	variables-Operators and Expression.	gram structure-Java Tokens-Implementing a Java program tors: Constants-variables-Data Types-Declaration of Iethods Periods 12 ition-creating objects-constructors-methods overloading-stat 12 n - One Dimensional Array-Creating Array-Two dimensional 12 rfaces: Defining Interface-Extending Interface. Packages: Jaackage. Java String. 12 ng Periods 12 ultithreading: Advantage, Multitasking. I/O Streams. 12									
	Classes, objects and Methods Periods										
Unit - II	Defining a classes-Field and method declaration-creating objects-constructors-methods overloading-stati										
Unit - II	members-Abstract class. Array: Introduction - One Dimensional Array-Creating Array-Two dimensional										
	Array										
	Inheritance and Packages	Periods	12								
	inneritance and Tackages	1 chious	12								
Unit III	Extending a class -Overriding methods. Interfaces: Defining Interface-Ex										
Unit - III											
Unit - III	Extending a class -Overriding methods. Interfaces: Defining Interface-Ex	tending Interface.	Packages: Jav								
Unit - III Unit - IV	Extending a class -Overriding methods. Interfaces: Defining Interface-Ex API package-creating package-Accessing Package. Java String.	tending Interface. Periods	Packages: Ja 12								
	Extending a class -Overriding methods. Interfaces: Defining Interface-Ex API package-creating package-Accessing Package. Java String. Exception Handling	tending Interface. Periods Iltitasking. I/O Stu	Packages: Ja 12 reams.								
Unit - IV	Extending a class -Overriding methods. Interfaces: Defining Interface-Ex API package-creating package-Accessing Package. Java String. Exception Handling Hierarchy, Advantage, Types, Keywords. Multithreading: Advantage, Mu	tending Interface. Periods ultitasking. I/O Stu Periods	Packages: Ja 12 reams. 12								
	Extending a class -Overriding methods. Interfaces: Defining Interface-Ex API package-creating package-Accessing Package. Java String. Exception Handling Hierarchy, Advantage, Types, Keywords. Multithreading: Advantage, Mu Applet Programming	tending Interface. Periods ultitasking. I/O Stu Periods	Packages: Jav 12 reams. 12								

Text Books	
1	Balagurusamy, "Programming in Java", 4th Edition 2010, TMH, New Delhi. Unit–I (Chapter –
	3.1,3.2,3.5,3.6,3.9,4.1 – 4.5, 5) Unit –II(Chapter – 8.2 -8.5,8.7 -8.9,8.16,9.1-9.4) Unit – III
	(Chapter – 8.11, 8.12,10.2,10.311.2,11.5,11.6) Unit – IV (Chapter –14.4,14.5,14.7,14.814.10) Unit
	–V (Chapter – 15.2,15.3,15.5-15.7,15.9-15.11,16.1-16.12)
References	
1	Herbert Scheldt, "Java2 The complete Reference" -McGraw Hill Publication
2	John R. Hubbard, "Programming With Java", 2nd Edition, TMH
E-References	
1	www.learnjavaonline.org
2	www.javaworld.com
3	www.onjava.com
4	www.java.sun.com



MEN EMPOWERMEN		Elayampalayam, 11	rucne	ngo	ue-o	57 205.									
Programme	B.Sc	Programme Code			tions	2021-2022									
Department	Inform	nation Technology			3										
			Pe	riod	s	um Mar	ks								
Course Code		Course Name	per	Wee	ek										
			L	Т	Р	С	CA	ESE	E Total						
21U3ITC05	Оре	erating Systems	4	0	0	3	25	75	100						
COURSE	To introduce stu	To introduce students with basic concepts of Operating System, its functions and services. To familiarize													
OBJECTIVES		the students with various views and management policies adopted by O.S. as pertaining with													
	processes,Deadle	processes, Deadlock, memory, File and I/O operations													
POs	PROGRAMME OUTCOME														
PO 1	Apply the know	edge of mathematics, scienc	e and	com	puti	ng in the core	informatio	on techno	ologies						
PO 2	Build software systems and apply the technologies in various fields of Computer Technology, including														
	-	ms, Web site development an	nd mai	nage	men	t, databases, a	nd softwar	re engin	eering						
	techniques.														
PO 3	Design, impleme	Design, implement and evaluate a computer-based system to meet the desired needs within the realistic constraints.													
PO 4	Review literature	e and indulge in research usi	ng res	earcl	h bas	sed knowledge	e and meth	ods to d	esign new						
	-	lyze, and interpret data to dr													
PO 5		current techniques, skills, an ns into the user environment				ary for compu	ting practi	ce and i	ntegrate						
PO 6		l knowledge to assess profes			/	ealth social a	nd cultural	lissues	luring						
100	profession practi		sionai	, 105	ui, 11	cului, sociul u		155405	auring						
PO 7		l and global impact of comp	uting	on ir	ndivi	duals, organiz	ations, and	d society	/.						
PO 8		inciples and responsibilities	-				,								
PO 9		vely as a team member or a l	-			-	on goal in	a multic	lisciplinary team						
PO 10	Communicate ef	fectively with a range of aud	iences	s usi	ng a	range of mod	alities incl	uding w	ritten, oral and						
	graphical.														
PO 11	Apply the know	edge of technology and man	ageme	ent p	rinc	iples to manag	ge projects	effectiv	ely in diverse						
	environments as	a member or a leader in the	team.												
PO 12	Engage in indep	endent and life-long learning	for co	ontir	nued	professional d	levelopme	nt.							
PO 13	-	stand and analyze a given rea		_					ng solutions.						
PO 14		e appropriate tools and techni	-				on activiti	es.							
PO 15	Updating themse	elves through e-learning and	self-st	udy	cou	rses.									

COs	COURSE OUTCOME
CO 1	Analyze the structure of OS and basic architectural components involved in OS design
CO 2	Analyze and design the applications to run in parallel either using process or thread models of different OS
CO 3	Organize the various device and resource management techniques for time sharing and distributed systems
CO 4	Explain the Mutual exclusion, Deadlock detection and agreement protocols of Distributed operating system
CO 5	Interpret the mechanisms adopted for file sharing in distributed Applications
Pre-requisites	Knowledge of data structures and algorithms for an Operating Systems and Systems Programming

					I	Know	ledge	Level	S						
1.Remen	nberi	ng, 2.1	Under	stand	ling, 3	S.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	5
		(3/2/	1 indic	ates the				Mappin on, 3-st		2-mediu	m, 1-we	eak)			
CO	COs KLs							POs	5		KLs				
									PO	1			1		
CO	1				4				PO	2			2		
									PO				6		
								PO 4				5			
СО	CO 2				6				PO :				3		
								PO 6 PO 7				5 4			
CO	CO 3			5				PO 8				6			
60	5		5					PO 9				6			
								PO 10					6		
CO	4			4				PO 11				6			
								PO 12				5			
									PO 1				6		
CO	5				2			PO 14					6		
						00 /		•	PO 1	5			5		
		(3/2)	1 indic	ates the	streng		PO Ma		rong 7	2-mediu	$m 1_w$	ak)			
		(3/2/	1 mule		streng			me Ou	-		III, 1-wo	.ak)			
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15
CO1	1	1	1	2	2	2	1	1	1	1	1	2	1	1	
															2
CO2	1	1	3	2	1	2	1	3	3	3	3	2	3	3	2
CO3	1	1	2	3	1	3	2	2	2	2	2	3	2	2	3
CO4	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2

CO5

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

ontent of the S	Syllabus											
	Operating System Overview	Periods	12									
	Operating System Objectives and Functions. History of Operating System	n: First, Second, T	hird & Fourth									
Unit - I	Generation Operating System. Types of Operating System: Main Frame - Server - Multiprocessor -											
	Personal Computer - Embedded - Real-Time Operating System. The Evolution of Operating System											
	Mutual Exclusion and Synchronization	Periods	12									
	Threads: Process and Threads - Multithreading - Thread Functionality -M	lutual Exclusion a	nd									
Unit - II	Synchronization: Principles of Concurrency - Mutual Exclusion - Semaphores. Deadlock and Starvation:											
	Resources - Principles of Deadlock - Deadlock Detection and Recovery - Deadlock Avoidance and											
	Prevention.											
	Memory Management	Periods	12									
Unit - III	Memory Management Requirements - Memory Partitioning - Paging - Segmentation. Virtual Memory:											
Unit - III	Hardware and Control Structures. Operating System Software: Fetch Policy - Placement Policy -											
	Replacement Policy - Basic Algorithms - Page Buffering.											
	Scheduling	Periods	12									
	Types of Scheduling: Long Term Scheduling - Medium Term Scheduling	g - Short-Term Sch	eduling.									
Unit - IV	Scheduling Algorithm: Short Term Scheduling Criteria - The Use of Prior	rities - Alternative	Scheduling									
	Policies. File Management: Overview - File Organization and Access - Fi	le Sharing - Reco	rd Blocking -									
	Secondary Storage Management.											
	I/O Devices-Organization of the I/O Functions	Periods	12									
	The Evolution of the I/O function-Direct Memory Access. I/O Buffering:	Single Buffer-Do	uble									
Unit - V	Buffer-Circular Buffer-The Utilities of Buffering. Disk Scheduling: Disk	Performance Para	meters-Disk									
	Scheduling Polices-RAID. Case Study: Windows OS, Linux OS, and MA	IC OS										
	Total Periods		60									

"Operating Systems Internals and Design Principles" by William Stallings, Second Edition, PHI Learning
Private Limited, New Delhi, 2012.
"Modern Operating Systems" by Andrew S. Tanenbaum, Third Edition, PHI Learning Private Limited,
NewDelhi, 2011.
"Operating Systems", by Achyut S Godbole, Second Edition, TMH Publishing Company Limited, New
Delhi, 2008.
"Operating System Concepts", by Silberschatz, Galvin and Gagne, Sixth Edition, John Wiley & Sons Inc
2002.
http://faculty.salina.k-state.edu/tim/ossg/Introduction/OSrole.html
www.tutorialspoint.com/operating_system/



MEN EMPOWERMEN													
Programme	B.Sc	Programme Code		tions	2021-2022								
Department	Inform	ation Technology			Semester			3					
			Peri	ods	Credit	Maxim	um Mar	ks					
Course Code	c c	Course Name	per W	/eek									
			L T		С	CA	ESE	E Total					
21U3ITC06	Com	puter Networks	4 () 0	4	25	75	100					
COURSE	To understand th	e basics of Computer Netwo	orks.To u	Inder	stand the impor	rtant OSI la	ayers of	computer					
OBJECTIVES	Networks.Become familiar with the basics of computer network architectures and protocols												
POs		PROGRAMME OUTCOME											
PO 1	Apply the knowl	pply the knowledge of mathematics, science and computing in the core information technologies											
PO 2	Build software s	Build software systems and apply the technologies in various fields of Computer Technology, including											
	hardware problems, Web site development and management, databases, and software engineering												
	techniques.												
PO 3	Design, impleme	ent and evaluate a computer-	based sy	stem	to meet the dea	sired needs	within	the realistic					
	constraints.												
PO 4		e and indulge in research usi	-		-	e and meth	ods to d	esign new					
	*	lyze, and interpret data to dr											
PO 5		current techniques, skills, an			sary for compu	iting practi	ce and i	ntegrate					
		ns into the user environment											
PO 6		l knowledge to assess profes	sional, l	egal,	health, social a	nd cultural	issues of	luring					
	profession practi												
PO 7	-	l and global impact of comp	-				l society						
PO 8		nciples and responsibilities			-		a	1:					
PO 9		vely as a team member or a left			-	-							
PO 10		fectively with a range of aud	iences u	sing	a range of mod	anties inclu	uding w	ritten, oral and					
PO 11	graphical.	edge of technology and man	agaman	nnin	ainlas to mono	n projects	offootiv	alu in divarsa					
POTI		a member or a leader in the	-	. prin	cipies to manag	ge projects	enecuv	ery in diverse					
PO 12		endent and life-long learning		inue	1 professional	levelonme	nt						
PO 13		tand and analyze a given rea			-	_		ng solutions					
PO 14	-	appropriate tools and techn	_				_	15 50100005.					
PO 15		elves through e-learning and	-										
1010	Pouring monise	and an ough o fourning and	Ser but	., 20									

COs	COURSE OUTCOME									
CO 1	To know about the security model									
CO 2	know and understand about the various security attacks and ethics in Information Security									
CO 3	To know and mange the risk management									
CO 4	To understand the Information security policy, standards, and practices									
CO 5	Demonstrate the Physical Security in the organization and in workplace									
Pre-requisites	A basic knowledge about Data Structure and Algorithm									

					I	Know	ledge	Level	S						
1.Reme	mberi	ng, 2.1	Under	stand	ling, 3	B.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizin	g
		(2.12						Mappin	-			1.			
СО		(3/2/	1 indic		-	th of co		on, 3-st		2-mediu	m, 1-we	eak)	KI		
	s			-	KLs				POs PO						
CO	CO 1				3				PO				1		
60					5				PO				6		
									PO				5		
CO	2				2				PO	5			3		
									PO				5		
								PO 7				4			
CO	CO 3			1				PO 8				6			
								PO 9 PO 10				6			
СО	Λ		2					PO 10 PO 11				6 6			
0	7				2			PO 12				5			
								PO 13				6			
CO	5				2			PO 14				6			
								PO 15					5	i	
				_			PO Ma								
		(3/2/	1 indic	ates the	e streng					2-mediu	m, 1-we	eak)			
COs							-	me Ou				1			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9		PO11		PO13	PO14	
CO1	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1
CO2	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1
CO3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1
CO4	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1
CO5	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the	Syllabus						
	Introduction	12					
I	Uses of Computer Network- LAN - WAN- MAN- Protocol Hierarchies - Protocols and						
Unit - I	Standards-Connection Oriented and Connection less Services - OSI Reference Model.						
	Physical Layer Per						
Unit - II	Transmission Media: Guided Transmission media - Wireless Transmission - Communication Satellites -						
Unit - II	Public Switched Telephone Network.						
	Data Link Layer	Periods	12				
Unit - III	Data Link Layer Design Issues - Error Detection and Correction - Elementary data link protocols - Sliding						
	Window Protocols.						
	Network Layer	Periods	12				
Unit - IV	Network Layer Design Issues. Routing Algorithms: Shortest Path- Link State - Distance Vector. Congestion						
Unit - I v	Control Algorithms: Principles. Inter networking: - Fragmentation - IP Addresses -OSPF.						
	Transport Layer	Periods	12				
Unit - V	DNS- Electronic	mail-World					
	Wide Web.						
	Total Periods		60				

Text Books						
1	"Computer Networks" Andrew S. Tanenbaum, 5th Ed, PHI private Ltd, 2009.					
References						
1	Behrouz A. Forouzan, "Data Communication and Networking", TMH, 2009.					
E-References						
1	https://stevessmarthomeguide.com/basic-networking-course/					
2	https://www.studytonight.com/computer-networks/					

CONTRAL ACTIVITY OF THE OWNER		VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS)						ISO BOOL2008			
TOMEN EM	Elayampalayam, Tiruchengode-637 205.										
Programme		B.Sc	Programme Code	UIT Regulat			ions	2021-2022			
Department		Inform	ation Technology	Semester				3			
Course Code		(Course Name	Periods Credit per Week		Maximum Marl		ks			
				L	Т	Р	С	CA	ESE	E Total	
21U3ITCP04		Java	a Programming Lab	0	0	4	3	40	60	100	
List of Experiments											
2		a Simple Program Using Array in Java.									
3		a Simple Program Using Java String.									
4					σ						
5		a Java Program to handle Exception Handling. a Java Program for File Operation Using IO Stream.									
6		te Event Handling using Mouse.									
7	Create	ite Event Handling using Keyboard.									
8	AWT F	Package Using Student Information.									
9	Swing	Package Using Telephone Bill System.									
10	JDBC U	DBC Using Employee Details.									

AND HAL AND THE REAL OF THE RE	VIVEKA	VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS) Elayampalayam, Tiruchengode-637 205.											
YOUEN EMPOWERNE		Elayampalayam, 1	Iruche	engo	ue-o.	57 205.							
Programme	B.Sc	B.Sc Programme Code UIT						tions	2021-2022				
Department	Inform	nation Technology				Semester			3				
Course Code	ourse Code Course Name				s ek	Credit	Maxim	um Mar	ks				
					Р	С	CA	ESI	E Total				
21U3ITCP0	HTML & Web Designing Lab					2	40	60	100				
List of Experin													
headi	e a web page ill ngs in marquee.	ustrating text formatting	tags	, fo	nt va	ariations, p	aragraph	alignn	nent and				
	e a web page us	ing hypertext link and in	nage	as h	yper	link.							
	gn a catalog for a	restaurant using lists.											
	g Nested tables c	reate your Mark sheet.											
⁵ Creat	e a class time ta	ble using tables.											
⁶ Desig	gn a login form.												
⁷ Prepa	are a student regi	stration form.											
⁸ Desig	gn an application	for pay slip through HT	ML	forn	ıs.								
9 Creat own.	e a HTML page	to demonstrate the usag	e of I	Fran	nes.	Choose the	content c	of the p	bage on your				
¹⁰ Desig	gn a simple colle	ge website.											



MEN EMPOWERMEN		Elayampalayam, 11	ruche	ngo	16-0	57 205.				
Programme	B.Sc	Programme Code			U	T	Regula	tions	2021-202	22
Department	Inform	ation Technology				Semester			3	
			Pe	riod	s	Credit	Maxim	um Mar	·ks	
Course Code		Course Name	per	Wee						
			L	Т	Р	С	CA	ESE	E Tota	1
	HTMI	& Web Designing	2	0	0	2	25	75	100	
21U3ITS01		& Web Designing	2	0	0	2	25	15	100	
COURSE	To inculcate kno	wledge on HTML concepts	and Pı	rogra	ımm	ing knowledge	e.To under	stand ba	asic concepts	s of
OBJECTIVES	style sheets and	graphics.Students will under	stand	the t	oasic	structure of w	veb page ci	reation a	and to know	the
	impact of HTMI	tags.								
POs		PRO	GRAN	/ME	E OU	TCOME				
PO 1	Apply the knowl	edge of mathematics, scienc	e and	com	puti	ng in the core	informatio	n techno	ologies	
PO 2	Build software systems and apply the technologies in various fields of Computer Technology, including									
	hardware proble	ms, Web site development a	nd mai	nage	men	t, databases, a	nd softwar	re engin	eering	
	techniques.	techniques.								
PO 3	Design, implement and evaluate a computer-based system to meet the desired needs within the realistic constraints.									
PO 4	Review literature	e and indulge in research using	ng res	earc	h bas	sed knowledge	and meth	ods to d	lesign new	
	experiments, and	lyze, and interpret data to dr	aw va	lid c	oncl	usions.				
PO 5	Select and apply	current techniques, skills, an	nd too	ls ne	cess	ary for compu	ting practi	ce and i	ntegrate	
	IT-based solution	ns into the user environment	effect	ivel	y					
PO 6	Apply contextua	l knowledge to assess profes	sional	, leg	al, h	ealth, social a	nd cultural	issues	during	
	profession practi									
PO 7		l and global impact of comp	-				ations, and	1 society	/.	
PO 8		inciples and responsibilities	-			-				
PO 9		vely as a team member or a le				-	-		1 1	
PO 10		fectively with a range of aud	iences	s usi	ng a	range of moda	alities inclu	uding w	ritten, oral a	nd
	graphical.									
PO 11		edge of technology and man	-	ent p	rinc	iples to manag	e projects	effectiv	ely in divers	se
		a member or a leader in the			-					
PO 12		endent and life-long learning				-				
PO 13	-	stand and analyze a given rea		-				-	ng solutions.	
PO 14		appropriate tools and techni	-				on activitie	es.		
PO 15	Updating themse	elves through e-learning and	self-st	udy	cou	ses.				

COs	COURSE OUTCOME
CO 1	Understand the basic concepts of HTML
CO 2	Discuss about cascading style sheet
CO 3	Applying graphics for web use
CO 4	Creation of table
CO 5	Creation of frames
Pre-requisites	A basic knowledge of Computer

]	Know	ledge	Level	s							
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	3.App	lying,	4.Ana	alyzin	g, 5.E	valuat	ing, 6.	Synth	esizin	5	
		(3/2)	1 indic	ates the				Mappin	-	-mediu	m, 1-we	eak)				
CO	s	(0/2/			KLs			<u>, , , , , , , , , , , , , , , , , , , </u>	POs			Jun)	KI	LS		
	5								PO				1			
CO	CO 1				1				PO				2			
									PO	3			6	ō		
									PO	4			5			
CO	CO 2				1				PO				3			
			PO 6							5						
60	~~ ~				2				PO PO			4 6				
CO	3		2					PO 8 PO 9				6				
									PO 1					6		
CO	4		2					PO 11					6			
									PO 1	2			5			
									PO 1	3			6			
CO	5				2			PO 14					6			
									PO 1	5			5	i		
		(2 2)	1 india	ataa tha	atuar -		PO Ma) mad:	na 1	ale)				
		(3/2/	1 111010	ates the	streng			me Ou			m, 1-we	eak)				
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	POS) PO10	PO11	PO12	PO13	PO14	PO15	
CO1	3	2	1								1			1		
				1	1	1	1	1	1	1		1	1		1	
CO2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
CO3	2	3	1	1	2	1		1 1 1 1 1 1 1 1						1		
CO4	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO5	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus								
	HTML Basics	Periods	4						
Unit - I Getting Started with web designing - Creating a Simple Page - Marking Up Text.									
	Hyperlinks	Periods	4						
Unit - II	Adding Links -Adding Images.								
	Tables & Forms	4							
Unit - III	Tables Markup - Forms - Embedded Media								
	Cascading Style Sheet	Periods	4						
Unit - IV	Introducing Cascading Style Sheet - Formatting Text - Colors and Backgr	ounds.							
	Padding and Margins	Periods	4						
Unit - V	Thinking Inside the Box - CSS Layout with Flex Box and Grid.								
	Total Periods		20						

Text Books	
1	"Learning Web Designing" - A Beginnerâ€ [™] s Guide to HTML, CSS, JavaScript and Web Graphics -
	Jennifer Niederst Robbins ,5th Edition , O'Reilly Media.
References	
1	"Web design with HTML", C. Xavier, TMH Publisher, 2000
E-References	
1	www.w3schools.com/html/
2	www.w3schools.com/html/html_responsive.a636sp
3	www.how - to - build - websites.com/



MEN EMPOWERMEN		Elayampalayam, 11	rucnen	goa	e-0.	37 205.				
Programme	B.Sc	Programme Code			U	IT	Regula	tions	2021-2022	
Department	Inform	ation Technology				Semester			4	
			Per	ods		Credit	Maxim	ks		
Course Code	c	ourse Name	per V	Veel	k					
					Р	С	CA	ESE	E Total	
	Relational Data	base Management Systems			0	4	25	75	100	
21U4ITC07		suse management systems		•	U			10	100	
COURSE	•To inculcate	knowledge on RDBMS con-	cepts a	nd P	rog	ramming with	Oracle.â€	€¢To un	derstand a role	
OBJECTIVES	database manage	ment system in an organizat	ion.•	έTo	unc	lerstand basic	database c	concept	including the	
	structure and operation of the relational data model									
POs		PRO	GRAM	ME	OU	TCOME				
PO 1	Apply the knowl	edge of mathematics, scienc	e and c	omp	uti	ng in the core	informatio	on techno	ologies	
PO 2	Build software systems and apply the technologies in various fields of Computer Technology, including									
	hardware problems, Web site development and management, databases, and software engineering									
	techniques.									
PO 3	Design, implement and evaluate a computer-based system to meet the desired needs within the realistic									
	constraints.									
PO 4		and indulge in research using	-			-	and meth	ods to d	esign new	
	-	lyze, and interpret data to dr								
PO 5		current techniques, skills, ar				ary for compu	ting practi	ce and 1	ntegrate	
PO 6		is into the user environment				anth annial a	ad aultural	licence	dunin a	
FUO	profession practi	knowledge to assess profes	sionai,	lega	1, 11	ealui, sociai ai		I Issues (unng	
PO 7		l and global impact of comp	uting of	n inc	livi	duals organiz	ations and	1 society	1	
PO 8		nciples and responsibilities	-				unons, uno	<i>a society</i>	•	
PO 9		ely as a team member or a lo				1	on goal in	a multic	lisciplinary	
	team.	5				1	0		1 2	
PO 10	Communicate ef	fectively with a range of aud	iences	usin	g a	range of moda	alities inclu	uding w	ritten, oral and	
	graphical.									
PO 11	Apply the knowl	edge of technology and man	agemer	nt pr	inc	iples to manag	e projects	effectiv	ely in diverse	
	environments as	a member or a leader in the	team.							
PO 12		endent and life-long learning				-				
PO 13	-	tand and analyze a given rea						-	ng solutions.	
PO 14		appropriate tools and techni	-				on activiti	es.		
PO 15	Updating themse	lves through e-learning and	self-stu	dy c	cour	rses.				

COs	COURSE OUTCOME
CO 1	Understand the database concepts, different database models, and database management systems and design
	database schema.
CO 2	Develop the ER structures for real world examples using the concept of Entity Relationship models with
	constraints and cardinalities.
CO 3	Apply the concepts of Normalization and design database which possess no anomalies.
CO 4	Apply the concepts of relational database theory to manage relational database management system.
CO 5	Exhibit database programming skills in SQL
Pre-requisites	Know about files, tables and database

Knowledge Levels

1.Remembering, 2.Understanding, 3.Applying, 4.Analyzing, 5.Evaluating, 6.Synthesizing

						<u></u>) / KL I	Mannin	σ							
		(3/2/	1 indic	ates the					-	2-mediu	m, 1-we	eak)				
COs	5				KLs				POs			KLs				
									PO	1			1			
CO	1		1						PO				2			
									PO				6			
									PO				5			
CO	CO 2				1				PO				3			
									PO				5			
									PO '				4			
CO	3		2						PO				6			
								PO 9 6								
								PO 10 6								
CO	4		2					PO 11					6			
								PO 12					5			
CO	-		2					PO 13					6			
CO	5		3					PO 14 PO 15					6 5			
						CO			POI	.5			3	1		
		(2/2)	1 india	atas tha	atrona		PO Ma		rong	2-mediu	m 1 m	alz)				
		(3/2/	1 maie	ates the	stieng		rogram				III, 1-we	ak)				
COs	DO1	DOD	DOO	DO 1	D05		-			1	DO11	DO 12	DO 12	DO14	DO15	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
CO2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
CO3	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO4	2	3	1	1	2	1	1	1 1 1 1 1					1	1	1	
CO5	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the	Syllabus									
	Introduction to DBMS:	Periods	12							
Unit - I	Introduction-Database System Applications - Purpose of Database Systems - View of Data - Database									
Unit - I	Languages and its types - Database Design - Database Engine - Database Architecture - Database Users and									
	Administrators - History of Database Systems.									
	Database Design Using ER Model:	Periods	12							
Unit - II	Overview - The Entity- Relationship Model - Mapping Cardinalities - Primary Key - Reducing ER									
Unit - II	Diagrams to Relational Schemas - ER Features -Symbols used in ER Nota	ation.								
	Relational Database Design:	Relational Database Design:Periods12								
Unit - III	Relational Database Design- Features - Decomposition using Functional Dependency - Normal Forms -									
Unit - III	1NF,2NF,3NF and BCNF- Relational Algebra: Introduction- Relational Algebra Operations.									
	SQL:	Periods	12							
Unit - IV	Overview-Structure of SQL-Set Operations-Aggregate Functions- Modif	ication of the Data	abase -							
Unit - I v	Joins-Transactions - Integrity Constraints .									
	PL/SQL:	Periods	12							
Unit - V	History- Fundamentals - Block structure - comments -Â- Data types - De	claration - Assign	ment operation-							
Unit - v	cursor and exceptions. PL/SQL Named blocks: Procedure -– Function- Package- Triggers.									
	Total Periods		60							

Text Books	
1	1. A Silberschatz, H Korth, S Sudarshan, "Database System and Concepts", 7th Edition McGraw-Hill,
	2019.(Unit I to IV)
2	2.Database system using ORACLEÂ", Nilesh Shah, PHI publication, 2nd Edition, 2010 (Unit V)
References	
1	1. Fundamentals of Data base management SystemÂ", Alexix Leon and Mathew Leon, TMH Publications,
	2010.
2	2. E-Book : Bill Pribyl, Steven Feuerstein, "Oracle PL/SQL Programming", O'Reilly Media, Inc., 6th
	Edition, February 2014.
E-References	
1	• www.javatpoint.com
2	• www.w3schools.com
3	• www.geeksforgeeks.org
4	• www.oracletutorial.com



MEN EMPOWERMEN		Elayampalayam, 11	ruche	ngo	16-0	57 205.						
Programme	B.Sc	Programme Code			U	IT	Regula	tions	2021-2022			
Department	Inform	ation Technology				Semester			4			
			Pe	riod	s	Credit	Maxim	um Mar	ks			
Course Code		Course Name	per	Wee	ek							
			L	Т	Р	С	CA	ESE	E Total			
	Softv	vare Engineering	4	0	0	3	25	75	100			
21U4ITC08												
COURSE	To provide techr	To provide technological view of Software Engineering. To enhance Software related issues. To improve the										
OBJECTIVES	design and modu	larization ideology. To provi	de gu	idan	ce ał	out document	ation.To r	ecogniz	e testing			
	methodologies, i	mplementation and maintena	ance.									
POs		PRO	GRAN	/ME	E OU	TCOME						
PO 1	Apply the knowl	edge of mathematics, scienc	e and	com	puti	ng in the core	informatio	n techno	ologies			
PO 2		Build software systems and apply the technologies in various fields of Computer Technology, including										
	hardware problems, Web site development and management, databases, and software engineering											
	techniques.											
PO 3	Design, implement and evaluate a computer-based system to meet the desired needs within the realistic											
	constraints.				1		1 .1	1 . 1				
PO 4		e and indulge in research using lyze, and interpret data to dr	-			-	e and meth	ods to d	lesign new			
PO 5	-	current techniques, skills, a					ting practi	ce and i	ntegrate			
105		is into the user environment				ary for compu	ting practi		inegrate			
PO 6		l knowledge to assess profes			· · · · · · · · · · · · · · · · · · ·	ealth, social a	nd cultural	issues	during			
	profession practi								U			
PO 7	Analyze the loca	l and global impact of comp	uting	on ir	ndivi	duals, organiz	ations, and	l society	/.			
PO 8	Apply ethical pri	nciples and responsibilities	during	, pro	fessi	onal practice.						
PO 9	Function effective	vely as a team member or a l	eader	to ac	com	plish a commo	on goal in	a multic	lisciplinary			
	team.											
PO 10		fectively with a range of aud	iences	s usi	ng a	range of moda	alities inclu	uding w	ritten, oral and			
DO 11	graphical.	. 1 6 1 1 1		4		· · · · · · · · · · · · · · · · · · ·			1 . 1			
PO 11		edge of technology and man a member or a leader in the	-	ent p	rinc	ipies to manag	e projects	effectiv	ely in diverse			
PO 12		a member of a leader in the endent and life-long learning		ontir	ned	professional d	evelonme	nt				
PO 13		tand and analyze a given rea				-			ng solutions.			
PO 14		appropriate tools and techn		-				-				
PO 15		lves through e-learning and	-									
	opdating themserves through e rearring and sent study courses.											

COs	COURSE OUTCOME
CO 1	Recall about the software evolution and software engineering practice.
CO 2	Illustrate on various Phases of software Project and its life cycle models.
CO 3	Classify the various building models in software development.
CO 4	Apply the various software testing tactics and its Methodologies.
CO 5	Identify the System, Acceptance and Performance Testing's criteria and its best practice.
Pre-requisites	Basic knowledge of Software industries and IT Sector

					I	Know	ledge	Level	s							
1.Remer	nberi	ng, 2.	Under	rstand	ling, 3	.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizin	5	
		(3/2)	1 indic	ates the				Mappin	-	2-mediu	m 1-w	eak)				
CO	s	(3/2/			KLs			511, 5 51	-		<u>, 1 w</u>		KI	LS		
							POs KLs PO 1 1 PO 2 2 PO 3 6 PO 4 5 PO 5 3 PO 6 5 PO 7 4 PO 9 6 PO 9 6 PO 10 6									
CO	1				1				PO	2			2	,		
													6)		
								PO 4 5								
CO	CO 2			2												
CO	3				2											
co	5				2									$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
													6			
CO	4				3				PO 1	1		6				
									PO 1							
CO	5				3			PO 14								
						CO	PO Ma	nnina	PO 1	5			5			
		(3/2)	1 indic	ates the	streng				rong 🤇	2-mediu	m 1-w	ak)				
		(0, 2,	1 111010		sureng			me Ou	-		,	cuit)				
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	3	2	1	1	1	1	1	1	1	1	1	1	1			
CO2	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO3	2	3	1	1	2	1	1	1	1	1	1	1	1	1		
CO4	1	2	1	1	3	1	2	1	1	1	1	1	1			
CO5	1	2	1	1	3	1	2	1	1	1	1	1	1			
	-	_	-	-	-	-		-	-	_	_	-	_	_		

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the	Syllabus									
	Introduction to Software Engineering	Periods	12							
	The Evolving role of Software - Software - Changing nature of Software - Legacy Software - Software									
Unit - I	myths. Software Engineering Practice: Software engineering practice - Communication practices - Planning									
	practices - Modeling practices - Construction practice- Deployment.									
	Software Development Life Cycle models	Periods	12							
Unit - II	Phases of Software project-Quality, Quality Assurance, Quality control -	Testing, Verificat	ion and							
Unit - II	Validation - Process Model to represent Different Phases - Life Cycle models. System Engineering:									
	Computer based systems - The system Engineering Hierarchy.									
	Building the Analysis Model	Periods	12							
	Requirement Analysis - Analysis Modeling Approaches - Data Modeling concepts - Object Oriented									
Unit - III	Analysis -Flow Oriented Modeling-Design Engineering - Design concepts - The design model-Modeling									
	component-Level Design: Designing class Based components.									
	Testing Tactics	Periods	12							
Unit - IV	Software Testing Fundamentals - Types of Testing: White Box Testing - Static Testing-Structural									
01111 - 1 V	Testing-Black Box Testing- Challenges in White Box and Black Box Testing. Integration Testing:									
	Integration Testing- Integration Testing as Type of Testing.									
	System and Acceptance Testing	Periods	12							
	System Testing Overview- Functional testing versus Nonfunctional Testin	ng-Functional test	ing -							
Unit - V	Non-functional Testing - Acceptance Testing and its criteria -Performance	e Testing: Factors	governing							
	Performance testing-What is Regression testing- Best Practices in Regress	sion Testing.								
	Total Periods		60							

Text Books	
1	Roger S. Pressman Software Engineering: A Practitioners Approach, McGraw-Hill Education, 2010.
2	Srinivasan Desikan, Gopalaswamy Ramesh- Software Testing Principles and Practices, Pearson Education,
	2012.
References	
1	Rajib Mall Fundamentals of Software Engineering Prentice Hall of India Pvt Ltd, 3 rd Edition 2010.
2	Sandeep Desai, Abhishek Srivastava Software Testing: A Practical Approach PHI Learning Pvt. Ltd, 2012.
3	David Burns Selenium 2 Testing Tools: Beginners Guide Tata MCGraw Hill Edition, 2012.
E-References	
1	www.softwareengineerinsider.com/articles/what-is-software-engineering.html.
2	https://www.udemy.com/courses/development/software-engineering.
3	https://www.tutorialspoint.com/software_testing/index.htm.



MEN EMPOWERMEN		Elayampalayam, Tiruchengoue-057 205.								
Programme	B.Sc	Programme Code			U	IT	Regulat	tions	2	021-2022
Department	Inform	ation Technology				Semester				4
			Per	iod	s	Credit	Maxim	um Mar	rks	
Course Code	C	course Name	per V	Vee	ek					
			-	Г	Р	С	CA	ESE	. .	Total
	RI	Programming		0	0	3	25	75	+	100
21U4ITC09		Togramming		0	U	5	23	10		100
COURSE	Understand the b	asics in R programming in to	erms of	co	nstr	ucts, control st	atements,	string		
OBJECTIVES		tand the use of R for Big Dat						-	Text	processing.
POs		DDO	2D AM			TCOME				
FOS		FROG	JKAM	VIE	. 00	TCOME				
PO 1		edge of mathematics, science			-	-			-	
PO 2	-	stems and apply the technol	-				-	-		-
	-	hardware problems, Web site development and management, databases, and software engineering								
	-	echniques.								
PO 3		ent and evaluate a computer-	based s	yste	em t	o meet the des	ired needs	within	the r	ealistic
	constraints.				. 1		1	. 1. (1	
PO 4		e and indulge in research usin lyze, and interpret data to dr	U			U	e and meth	ous to c	lesigi	n new
PO 5	-	current techniques, skills, ar					ting practi	ce and i	integ	rate
105		is into the user environment				ary for compu	ting practi		integ	lute
PO 6		knowledge to assess profes				ealth, social a	nd cultural	issues	durin	19
100	profession practi		,	8	,			1000000		-6
PO 7		l and global impact of comp	uting of	n in	divi	duals, organiz	ations, and	l society	y.	
PO 8	Apply ethical pri	nciples and responsibilities of	luring p	oro	fessi	onal practice.		-		
PO 9	Function effectiv	rely as a team member or a le	eader to	ac	com	plish a comm	on goal in	a multio	discip	olinary
	team.									
PO 10	Communicate ef	fectively with a range of aud	iences	usiı	ng a	range of moda	alities inclu	uding w	ritter	n, oral and
	graphical.									
PO 11		edge of technology and man	-	nt p	rinc	iples to manag	ge projects	effectiv	ely i	n diverse
		a member or a leader in the								
PO 12		endent and life-long learning				-				
PO 13		tand and analyze a given rea						-	ng so	olutions.
PO 14		appropriate tools and techni					on activitie	es.		
PO 15	Updating themse	lves through e-learning and	self-stu	dy	cou	rses.				

COs	COURSE OUTCOME
CO 1	To understand the History and Overview of R
CO 2	To gain knowledge in Getting Data In and Out of R
CO 3	Able to understand various Vectorized Operations
CO 4	Able to understand various Control Structures in R
CO 5	Scoping Rules of R.
Pre-requisites	Basic knowledge of mathematics and programming language

					ł	Know	ledge	Level	S								
1.Remer	nberi	ng, 2.	Under	rstand	ling, 3	App	lying,	4.Ana	alyzin	g, 5.E	valuat	ing, 6.	Synth	esizing	5		
		(3/2)	1 indic	ates the				Mappin	-	2-mediu	m 1-we	eak)					
CO	s	(0/2/			KLs			511, 5 50	POs			Juir)	KI	LS			
	-								PO								
СО	1				2			PO 2									
									PO	3			1				
	<u> </u>								PO	4			1				
CO	CO 2			1					PO								
									PO								
	2								PO								
CO	3		4					PO 8 PO 9					2 2 2 3 3 3 3 1 1 1				
									PO 1								
CO	4				5				PO 1								
					C				PO 1					1 1 1 1 1 1 1 1 1 1 1 1			
									PO 1					1 1			
CO	5				6				PO 1	4			1				
									PO 1	5			1				
							PO Ma										
	1	(3/2/	1 indic	ates the	streng				-	2-mediu	m, 1-we	eak)					
COs			1				-	me Ou						1			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14			
CO1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
CO2	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3		
CO3	1	1	1	1	1	1	1	1	1	1	1	1 1 1 1					
CO4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
CO5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

ontent of the S	yllabus									
	History and Overview of R	Periods	12							
	What is R? What is S? The S Philosophy - Back to R - Basic Features of R - Free Software - Design of the									
Unit - I	R System - Limitation of R - R Resources Getting Started with R: Installa	tion - Getting star	ted with the R							
Unit - I	interface. R Nuts and Bolts: Entering Input - Evaluation - R Objects - Nu	mbers - Attributes	s - Creating							
	Vectors - Mixing Objects - Explicit Coercion - Matrices - Lists - Factors -	Missing Values -	Data Frames -							
	Names.									
	Getting Data In and Out of R	Periods	12							
	Reading and Writing Data - Reading Data Files with read.table() - Reading	g in Larger Datas	ets with							
Unit - II	read.table - Calculating Memory - Requirements for R Objects - Using the readr Package - Using Textual									
Unit - II	and Binary Formats for Storing Data - Using dput() and dump() - Binary Formats - Interfaces to the Outside									
	World - File Connections - Reading Lines of a Text File - Reading From a URL Connection									
	Subsetting R Objects	Periods	12							
	Subsetting R Objects - Subsetting a Vector - Subsetting a Matrix - Subsetting Lists - Subsetting Nested									
Unit - III	Elements of a List - Extracting Multiple Elements of a List - Partial Matching - Removing NA Values.									
	Vectorized Operations - Vectorized Matrix Operations - Dates and Times - Dates in R Times in R -									
	Operations on Dates and Times - Summary									
	Managing Data Frames	Periods	12							
	Managing Data Frames with the dplyr package - Data Frames - The dplyr Package - dplyr Grammar -									
Unit - IV	Installing the dplyr package - select() - filter() - arrange() - rename() - mu	tate() - group_by(). Control							
	Structures - if-else - for Loops - Nested for loops - while Loops - repeat L	oops - next, break	- Summary.							
	Functions and Standards	Periods	12							
	Functions - Functions in R - Your First Function - Argument Matching - I	Lazy Evaluation T	he Argumen							
Unit - V	- Arguments Coming After the Argument.Coding Standards for R - Loo	op Functions - Lo	oping on the							
	Command Line - lapply() - sapply() - split() - Splitting a Data Frame - tap	ply - apply() - Co	l/Row Sums and							
	Means - Other Ways to Apply - mapply()									
	Total Periods		60							

Text Books	
1	Roger D. Peng, "R Programming for Data Science", LeanPub, 2015. (e-Book).
References	
1	Tony Fischetti, "Data Analysis with R", Paperback, PACKT Publications, 2015
2	Grolemund, Garrett, "Hands on Programming with R", O' Reilly Inc., 2015
3	Paal Teetor, "R Cook Book", O' Reilly, Paperback Edition, 2011
4	Joris Meys Andrie de Vries, "R Programming Dummies", Paperback Edition, 2016 (eBook).
E-References	
1	https://www.youtube.com/watch?v=_V8eKsto3Ug
2	https://www.youtube.com/watch?v=7NLPPFU0O3w
3	https://www.javatpoint.com/r-tutorial

NOMEN ENTR	22 L LUNG THE THE	VIVEKAI	NANDHA COLLEGE WOMEN (Al Elayampalayam, T	UTO	NO	NO	US)	NCES FO	DR	CERTIFICO CERTIFICO
Progr	amme	B.Sc	Programme Code			UI	Τ	Regula	tions	2021-2022
Depar	rtment	Inform	nation Technology				Semester			4
Course	e Code	(Course Name		Periods Cr per Week			Maxim	ks	
				L	Т	Р	С	CA	ESE	E Total
21U4	ITCP06	Relational Datab Lab	ase Management System	0	0	4	4	40	60	100
1 2 3	Data M Execut i) Di ii) Di	efinition Langu anipulation La the following splay employed splay employed	uage (DDL) commands inguage (DML) and Da g queries e whose salary greater t e whose salary between ployee with Ename, Ph	ta Co han 8 6000	ntro 3000) and	l La 1 150	000.	CL) comn	nands	in RDBMS
4		1 0	plement Built in Funct		n SO	QL.				
6			nplement Set Operation on to find factorial.	S.						
7	Write I	PL/SQL Progra	m for Electricity Bill C	alcula	atio	1 usi	ng Cursor.			
8	Write a	PL/SQL proce	edure to insert a numbe	r.						
9	Write a	Database Trig	ger for displaying Gra	ade of	f the	Stu	dent			
10	Databa	se Design and	Implementation Pay Ro	oll Pro	oces	sing				

NONEN ENG	AL MYSTITETERS FOR	VIVEKAI	NANDHA COLLEGI WOMEN (A Elayampalayam, '	UTO	NON	ΙΟΙ	J S)	ICES FO	DR	TOVINHICAN COTTACT
Progr	amme	B.Sc	Programme Code			UI	T	Regulat	tions	2021-2022
Depa	rtment	Inform	ation Technology				Semester			4
Course	e Code	(Course Name		eriod r Wee		Credit	Maxim	ks	
				L	Т	Р	С	CA	ESH	E Total
21U4	ITCP07	R Pı	ogramming Lab	0	0	3	3	40	60	100
	Experimen	nts	tio							
2		ng Simple Com								
3	R as aC	alculator applie	cation							
4	Executi	on of Loops an	d Functions via R - Co	ontrol S	Struc	cture	S			
5		Descriptive Stati ate() in R	stics using <i>summary()</i>	– sapj	oly()	- de	escribe() – s	stat.desc() – by	group using
6	Reading	g and writing d	fferent types of Datase	ets in F	٢					
7	Visuali	zations: Visuali	ze various Plotting and	d Grap	hics	in R	ł			
			imple Regression usin	<u> </u>	ckaş	ge				
		• • • •	eans by using R Packa	-						
10	Classifi	cation: Use Ra	ndom Forest / Naïve B	ayes /	NN	by u	sing R Pac	kage		



OMEN EMPOWERMEN		Elayampalayam, 11	ruche	ngo	ue-0.	57 205.				
Programme	B.Sc	Programme Code			U	IT	Regula	tions	2021-2022	
Department	Inform	ation Technology				Semester			4	
			Pe	riod	s	Credit	Maxim	um Mar	ks	
Course Code		Course Name	per	Wee	ek					
			L	Т	Р	С	CA	ESE	E Total	
	Inte	ernet of Things	2	0	0	2	25	75	100	
21U4ITS02		inet of Things		Ŭ	Ū		23	10	100	
COURSE	•Obtain an ov	verview of IoT applications.	i€¢Co	mpr	eher	d the architec	ture, desig	n princi	ples and	
OBJECTIVES	standards of IoT.	standards of IoT.•Understand M2M and IoT technology fundamentals.•Knowing about Python								
	language.									
POs		PRO	GRAN	1ME	E OU	TCOME				
PO 1	Apply the knowl	edge of mathematics, scienc	e and	com	puti	ng in the core	informatio	n techn	ologies	
PO 2	Build software s	stems and apply the techno	logies	in v	ariou	us fields of Co	mputer Te	chnolog	gy, including	
	hardware problem	ns, Web site development a	nd ma	nage	men	it, databases, a	nd softwa	re engin	eering	
	techniques.									
PO 3	Design, impleme	ent and evaluate a computer-	based	syst	em t	o meet the des	ired needs	within	the realistic	
	constraints.									
PO 4		and indulge in research usi	-			•	e and meth	ods to d	lesign new	
DO 5	-	lyze, and interpret data to di					·			
PO 5		current techniques, skills, and				ary for compu	ting practi	ce and 1	ntegrate	
PO 6		ns into the user environment I knowledge to assess profes			<u> </u>	astth social a	nd cultural	licence	during	
100	profession practi		sionai	, ieg	ai, 11	calui, social a	llu cultural	155005	uuring	
PO 7		l and global impact of comp	uting	on ir	ndivi	duals, organiz	ations, and	1 society	/.	
PO 8	•	nciples and responsibilities				-				
PO 9		vely as a team member or a l	-	-			on goal in	a multic	lisciplinary	
	team.	-				-	-			
PO 10	Communicate ef	fectively with a range of auc	liences	s usi	ng a	range of moda	alities inclu	uding w	ritten, oral and	
	graphical.									
PO 11		edge of technology and man	-	ent p	rinc	iples to manag	e projects	effectiv	ely in diverse	
		a member or a leader in the								
PO 12		endent and life-long learning				-	-			
PO 13	-	tand and analyze a given rea		-				-	ng solutions.	
PO 14		appropriate tools and techn	-				on activition	es.		
PO 15	Updating themse	lves through e-learning and	seit-st	udy	cou	rses.				

COs	COURSE OUTCOME
CO 1	To know about the evolution for mobile, home and embedded applications that is connected to the internet,
	to integrate communication.
CO 2	To gather knowledge about how the devices share the data on the cloud and analyze it in a secure manner
	on the network.
CO 3	To know how the industries are adopting internet-of-things-solutions to improve their existing systems.
CO 4	To get knowledge about how the things to be connected with various devices.
CO 5	To get familiar about python data types.
Pre-requisites	Knowing about Programming Language to build the Internet and different elements

Knowledge Levels

1. Remembering, 2. Understanding, 3. Applying, 4. Analyzing, 5. Evaluating, 6. Synthesizing

		(3/2/	1 indic	ates the				Mappin on 3-st	-	2-mediu	m 1-we	ak)			
COs	8	(3/2/			KLs			POs					KI	Ls	
									PO	1			1		
CO	1				2			PO 2					2	,	
									PO	3			6		
									PO	4			5	i	
CO	2		1						PO				3		
									PO				5		
								PO 7				4			
CO	3		4					PO 8				6			
								PO 9			6 6				
								PO 10							
CO	4		5					PO 11 PO 12				6 5			
								PO 12 PO 13					5 6		
CO	5				6			PO 13				6			
	5				0				PO 1				5		
						<u>CO /</u>	PO Ma	nning	101						
		(3/2/	1 indic	ates the	e streng				rong. 2	2-mediu	m. 1-we	eak)			
		(2, 2,						me Ou			,)			
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15
CO1	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1
CO2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1
CO3	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2
CO4	1	1	2	3	1	3	2	2	2	2	2	3	2	2	3
CO5	1	1	3	2	1	2	1	3	3	3	3	2	3	3	2

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the	Syllabus											
	Introduction TO Internet OF Things:	Periods	5									
Unit - I	Introduction - Physical Design of IoT - Things in IoT, IoT Protocols.											
	IoT Enabled Technologies:	Periods	5									
Unit - II	Wireless Sensor Networks - Cloud Computing - Big data analytics - Communication protocols - Embedded											
Systems.												
	Domain Specific IoTs:	Periods										
Unit - III	Home, City, Environment, Energy, Retail, Logistics, Agriculture, Industry, health and Lifestyle.											
	IoT Platforms Design Methodology:	Periods	5									
Unit - IV	Introduction - IoT Design Methodology.											
	Logical Design Using Python:	Periods	5									
Unit - V	IoT Systems - Logical Design Using Python: Introduction - Installing Python	thon - Python Dat	a Types & Data									
Unit - V	Structures: Numbers - Strings - Lists.											
	Total Periods		20									

Text Books	
1	1. Arshdeep Bahga and Vijay Madisetti, "Internet of Things - A Hands-on Approach", Universities Press,
	2015.
References	
1	1. Samuel Greengard, "The Internet of Things".
2	2. Cuno Pfister, "Getting started with Internet of Things".
E-References	
1	1. https://wwkw.tutorialspoint.com/internet_of_things/
2	2. https://www.guru99.com/iot-tutorial.html
3	3. http://www.steves-internet-guide.com/internet-of-things/

VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS) Elayampalayam, Tiruchengode-637 205.

Programme	B.Sc	Programme Code			U	tions	2021-2022							
Department	Inform	ation Technology				5								
	Periods Credit Maximum Mar													
Course Code	0	Course Name	per	Wee	ek									
			L	Т	Р	С	CA	ESE	Total					
21U5ITC10	.NET I	Programming	5	0	0	4	25	75	100					
COURSE OBJECTIVES		igned for the beginners as a ed to provide the understand												
POs	PROGRAMME OUTCOME													
PO 1	Apply the knowle	Apply the knowledge of mathematics, science and computing in the core information technologies												
PO 2	-	stems and apply the techno ns, Web site development a	-						-					
PO 3	Design, impleme constraints.	Design, implement and evaluate a computer-based system to meet the desired needs within the realistic constraints.												
PO 4		and indulge in research usi lyze, and interpret data to dr					and metho	ds to des	ign new					
PO 5		current techniques, skills, and sinto the user environment				ry for comput	ing practice	e and inte	egrate					
PO 6	Apply contextual practice.	knowledge to assess profes	sional,	lega	l, hea	alth, social an	d cultural i	ssues du	ring profession					
PO 7	Analyze the local	and global impact of comp	uting o	n inc	livid	uals, organiza	tions, and s	society.						
PO 8	Apply ethical prin	nciples and responsibilities	during	profe	essio	nal practice.								
PO 9	Function effectiv	ely as a team member or a l	eader to	o acc	omp	lish a commo	n goal in a	multidis	ciplinary team					
PO 10	Communicate eff graphical.	fectively with a range of auc	liences	usin	g a ra	ange of moda	lities inclue	ling writ	ten, oral and					
PO 11	11.0	edge of technology and man a member or a leader in the	•	nt pri	incip	les to manage	e projects e	ffectively	y in diverse					
	Engage in indene		for co	ntinu	ed p	rofessional de	evelopment	•						
PO 12	Engage in indepe	ndent and life-long learning		Ability to understand and analyze a given real-time problems and propose feasible computing solutions.										
PO 12 PO 13				prob	lems	and propose	feasible co	mputing	solutions.					
	Ability to underst		ıl-time	<u> </u>		* *			solutions.					

COs	COURSE OUTCOME
CO 1	Impart knowledge in fundamental concepts of .Net
CO 2	Use .NET components in a windows and web application.
CO 3	Implement the concepts of Operators, Conditional Logics etc.,
CO 4	Inculcate ability in creativity & design of computer support systems and skills for analyze various software applications
CO 5	Understand & apply Data binding
Pre-requisites	Basic Knowledge of Programming Language and HTML

Knowledge Levels

1. Remembering, 2. Understanding, 3. Applying, 4. Analyzing, 5. Evaluating, 6. Synthesizing

		(2/2	/1 · 1·	1				Mappin	-	1.	1	1)				
C	Os	(3/2)			e streng KLs	gth of co	orrelati	on, 3-si	rong, 2 POs	2-mediu s	m, 1-we	ак)	KI	LS		
									РО	1			1			
CO	D 1				1				PO				4	Ļ		
									PO	3			2	2		
									PO	4			6	,		
CO	0 2			2					PO	5			3	5		
							PO 6				KLs 1 4 2 6 3 5 4 6 5 5 4 6 5 5 4 6 5 5 4 6 5 6 6 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 1 1 1					
									PO 7							
CO	03		2						PO							
									PO			$ \begin{array}{r} 6 \\ 3 \\ 5 \\ 4 \\ 6 \\ 5 \\ 5 \\ 4 \\ 6 \\ 6 \\ 5 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6$				
								PO 10								
CO	04				3	3			PO 11							
								PO 12			6					
	~ ~				•			PO 13					-			
C	05		3				PO 14 PO 15									
						<u> </u>	DO Ma		POI	3			Ċ)		
		(2 2)	1 india	atos th	atrona		PO Ma		rong	2-mediu	m 1 w/	alr)				
		(3/2)		ales in	such			-	-		III, 1-wc	ak)				
COs	DOI	D O O	DOD	DOL	D05		-	me Ou			DOIL	D010	DOID	DO14	DOI	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11			PO14	PO15	
CO1	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
CO2	2	1	3	1	2	1	1	1	1	1	1	1	1	1	1	
CO3	2	1	3	1	2	1	1	1	1	1	1	1	1	1	1	
CO4	1	2	2	1	3	1	2	1	1	1	2	1	1	1	1	
CO5	1	2	2	1	3	1	2	1	1	1	2	1	1	1	1	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

	Introduction to .Net	Periods	12									
Unit - I	.Net Framework - Visual Basic .Net - Creating windows forms applications - creating a web forms											
Unit - I	application - Data types and variables - Operators -Conditional Logic.											
	Procedures	Periods	12									
Unit - II	Procedures - Dialog Boxes - Dictionary Object - Namespaces - Visual Basic .Net IDE - Controls - Specific											
	controls.											
	Data Access	Periods	12									
Unit - III	Introduction to Data Access in .Net - Overview of ADO.Net - ADO .Net -Visual Studio .Net Database											
	Tools.											
	Introduction to XML	Periods	12									
Unit - IV	Introduction to XML in .Net - Introduction to Web Development - Introduction to ASP.Net - Page											
	framework.											
	Web Controls	Periods	12									
Unit - V	Web Controls - Validation Control - Events - Cascading Style sheets - ASP.Net applications.											
			-									

Text Books	
1	Bill Evjen & Jason Beres, Visual Basic .Net Programming Bible, Wiley Publishing, 2006
References	•
1	David Chappell ,Understanding .NET ,Pearson education ,2002
2	Steven Holzner, VB.Net Programming Black book, Dreamtech ,2005
3	Matt J. Couch, ASP. NET and VB. NET Web programming, Pearson Education. 2002
E-References	
1	www.slideshare.net/
2	www.powershow.com/



OMEN EMPOWERMEN	Elayampalayam, Tirucnengode-637 205.													
Programme	B.Sc	Programme Code		U	IT	Regulat	tions	2021-2022						
Department	Inform	ation Technology			Semester	•		5						
	Periods Credit Maximum Marks													
Course Code	c c	Course Name	per We	eek										
			L T	Р	С	CA	ESE	Total						
	PHI	Programming	5 0	0	4	25	75	100						
21U5ITC11														
COURSE	To highlight all features of PHP Programming and apply it to develop various websites & applications													
OBJECTIVES POs	PROGRAMME OUTCOME													
PO 1	Apply the knowledge of mathematics, science and computing in the core information technologies													
PO 2	Build software systems and apply the technologies in various fields of Computer Technology, including													
	hardware problems, Web site development and management, databases, and software engineering													
	techniques.													
PO 3	• · ·	ent and evaluate a computer-	based sys	stem t	o meet the des	sired needs	within t	he realistic						
	constraints.													
PO 4		e and indulge in research using	-		-	e and meth	ods to de	esign new						
PO 5	-	lyze, and interpret data to dr current techniques, skills, ar				tina nuosti	as and in	taquata						
FO J		is into the user environment			ary for compu	ing practi	ce and n	negrate						
PO 6		l knowledge to assess profes		•	ealth, social a	nd cultural	issues d	uring						
	profession practi		,	8, .										
PO 7		l and global impact of comp	uting on i	indivi	duals, organiz	ations, and	l society							
PO 8	Apply ethical pri	nciples and responsibilities of	luring pr	ofess	ional practice.									
PO 9	Function effectiv	vely as a team member or a lo	eader to a	accon	plish a comm	on goal in	a multid	isciplinary tean						
PO 10	Communicate ef	fectively with a range of aud	iences us	sing a	range of mode	alities inclu	uding wr	itten, oral and						
	graphical.													
PO 11	•	edge of technology and man		princ	iples to manag	ge projects	effective	ely in diverse						
		a member or a leader in the												
PO 12		endent and life-long learning			-	-								
PO 13		tand and analyze a given rea	-				-	g solutions.						
PO 14		appropriate tools and techni	-			on activitie	es.							
PO 15	Updating themse	lves through e-learning and	self-study	y cou	rses.									

COs	COURSE OUTCOME
CO 1	Understand the concepts of PHP programming language with Basics & Control Structures
CO 2	Working PHP With MySQL
CO 3	Understand the concepts of Functions & Arrays
CO 4	Applying the concepts of Object Oriented PHP, Error and Exception Handling in PHP Programming
CO 5	Explore the concepts Strings and Regular Expression, Design the Web Form
Pre-requisites	A basic knowledge of HTML and Web Designing

					I	Know	ledge	Level	S							
1.Remer	nberi	ng, 2.	Under	rstand	ling, 3	.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	5	
		(3/2)	1 indic	ates the) / KL I		-	2-mediu	m 1-we	eak)				
CO	COs KLs									3		Juicy	KI	Ls		
									PO	1			1			
CO	1		3						PO	2			2	,		
									PO	3			6			
									PO				5			
CO	CO 2				3				PO				3			
								PO 6					5			
CO	CO 3			4					PO			4 6				
CO									PO P			6				
									PO 1				6			
CO	4		4						PO 1				6			
								PO 12					5			
								PO 13					6			
CO	5				4			PO 14					6			
								PO 15					5			
		(3/2)	1 indic	ates the	streng		PO Ma		rong (2-mediu	m 1-we	eak)				
		(3/2/	1 maie		strong		rogram				iii, i wv	Juny				
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO2	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO3	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2	
CO4	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2	
CO5	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2	
	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus									
	Introduction to PHP	Periods	12							
	History - General Language Features - PHP Basics: Embedding PHP Cod	e in your Web Pa	ges -							
Unit - I	Unit - I Commanding Your Code - Output Data to the Browser. PHP's Supported Data Types- Identifier									
	Variables - Constants - Expressions -String - Interpolation. Control Structures: Conditional Stateme									
	Looping Statements - File Inclusion Statements									
	Introduction to MySQL Periods									
	Naming Database Elements-Choosing Your Column Types- Choosing oth	ner Column Prope	rties-Accessing							
Unit - II	MySQL. Using PHP With MySQL Modifying The Template - Connec	ting To MySQL -	Executing							
	Simple Queries - Retrieving Query Results -Ensuring Secure SQL-Counti	ing Returned Reco	ords- Updating							
	Records With PHP.									
	Functions	Periods	12							
Unit - III	Invoking Function - Creating a Function - Function Libraries. Arrays: Creating a Function - Function Libraries.	eating an Array - A	Adding and							
Omt - m	Removing Array Elements - Locating Array Elements - Traversing Array - Merging - Slicing - Splicing and									
	Dissecting Array.									
	Object Oriented PHP	Periods	12							
Unit - IV	Benefits of OOP - Key OOPs Concepts- Constructors and Destructors- St	atic Class Membe	ers -The instance							
Ont IV	of Keyword- Error and Exception Handling- Configuration Directives- Er	ror Logging-Exce	ption Handling							
	Strings and Regular Expression	Periods	12							
Unit - V	Other String Specific Function - Alternatives for Regular Expression Fun-	ctions. Forms: PH	P and Web							
Unit y	Forms-Taking Advantage of Pear: HTML_QuickForm-Installimg HTML	_QuickForm-Crea	ating a Simple							
Form- Using Auto-Completion										
	Total Periods		60							

Text Books	
1	"Beginning PHP and Oracle From Novoice to professional" W.Jason Gilmore and Bob Brylr edition –
	2008
2	"PHP 6 and my SQL 5 " Larry Ullman -2008(chapter 4 & 8)
References	
1	"Spring into PH5 the Small Professional choice" Steven Holzner, Pearson education, Edition: First
	Impression 2006.
2	"PHP and my SQL for dynamic websites" – Larry Ullam-fourth edition 2015
3	"PHP 6 and my SQL ": bible – Steve Suehring, Tim converse, Joy Park -2009
E-References	
1	www.w3schools.com/php/

State Frederic	NO THE REAL PROPERTY OF THE PR	VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS) Elayampalayam, Tiruchengode-637 205.										
Prog	ramme	B.Sc	Programme Code			UI	T	Regulat	ions	20	2021-2022	
Depa	rtment	Informa				Semester	1			5		
Course	e Code	(Course Name		eriod: Wee		Credit	Maxim	um M	arks		
				L	Т	Р	С	CA	E	SE	Total	
21U5	ITCP08	.Net I	Programming Lab	0	0	4	3	40	(50	100	
List of I	Experimen		rols and creation of me	nus.								
2	Mouse	Events Using V	B.Net									
3	Implem	enting dialog co	ontrols									
4	Validati	on control in A	SP.Net									
5	Implem	enting Data grid	1.									
6		ge creation usin										
7			onnectivity of database.									
8			using ASP.Net.									
9			intenance using ASP.N									
10		a user control th	at displays the current of the curre	late an	d tii	me. I	nclude it in	a Web Fo	orm a	and re	efresh it	

BOMEN ENP	2 Martinet	VIVEKAN	UVHinited CERTIFICO							
Progra	amme	B.Sc	Programme Code			U	[T	Regulat	tions	2021-2022
Depar	rtment	Inform	ation Technology				Semester	1		5
Course	e Code	С	ourse Name		eriod We	-	Credit	Maxim	um Mark	cs
				L	Т	Р	С	CA	ESE	Total
21U51	TCP09	PHP F	rogramming Lab	0	0	5	3	40	60	100
1	W	Use of con Use of loc Use of dif rite a PHP prog	rogram using the follow nditional statements in pping statements in PHI ferent types of arrays gram to prepare the stuc gram to find odd or ev	PHP P				umbers.		
4		rite a PHP Prog	gram to demonstrate the	e vari	able		ction			
5		Give the examp Substr();	le of String function	<u>e) Iss</u> e) Str Form	case		p() d)	Unset() Strpos() nents.		
7	Da	tabase connect	ivity in PHP with MyS	QL						
8	То	Create a table	using PHP Programmi	ng.						
9	То	create a table	and do all the DDL con	nman	ds u	ising	g PHP Prog	ramming		
10	De	evelop a PHP p	rogram to display stude	ent in	forn	natio	on using MY	YSQL tab	ole.	
11		e 1	vebpage using PHP							
12	Cr	eate a College	Web site using PHP Pro	ogran	n.					

	VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS)										
HONEN EMPOWERNEN		Elayampalayam, Tir	uchen	gode	-637	205.					
Programme	B.Sc	Programme Code			ons	2021-2022					
Department	Department Information Technology					Semester				5	
Course Code	0	Course Name	-	riods Wee		Credit	Maximu	m Ma	arks		
			L	Т	Р	С	CA	E	SE	Total	
21U5ITCPR01		ject Work-I 1se Mini Project)	0	0	4	3	40	6	50	100	
		Project Wo	rk Pa	tteri	1						
FIRST REVIE	EW:					(20 N	larks)				
3. Confirm	Platform (Langunation Letter (fro of Internal Guide	age / Package Selected) om Company / Industry) e with Designation & Quali	ficatio	on (i	n the	e company / In	ndustry)				
SECOND REV	VIEW:					(20 N	larks)				
 Module DFD / Estima Compl 	 DFD / ERD / System Flow Diagram (Whichever Applicable) Estimated Time of Completion Completed Work in the form of Percentage Analysis 										
FINAL REVI	(60 Marks)										
 Documentation Screens Shots DFD / ERD / System Flow Diagram (Whichever Applicable) Final Project Report (with executable format including complete source code) 											
	The Pas	sing minimum shall be 40)% o i	it of	6 0 1	marks (24 M	arks)				



WEN EMPOWERMET	Enayamparayam, 11ruchengoue-057 205.												
Programme	B.Sc	Programme Code	UIT Regulations					2021-2022					
Department	Inform	ation Technology				Semester			5				
			Per	iod	s	Credit	Maximum Marks						
Course Code	C	ourse Name	per '	Wee	ek								
			L	Т	Р	С	CA	ESE	E Total				
21U5ITS03	Data Ar	alysis using Excel	2	0	0	2	25	75	100				
COURSE	To emulate stude	nts to the current needs of d	ata ana	lysi	s an	d business inte	elligence f	undame	ntal applications				
OBJECTIVES	through advance	nrough advance excel.											
POs		PROGRAMME OUTCOME											
PO 1	Apply the knowl	edge of mathematics, science	e and c	om	putii	ng in the core	informatio	n techn	ologies				
PO 2	Build software sy	uild software systems and apply the technologies in various fields of Computer Technology, including											
	hardware probler	ardware problems, Web site development and management, databases, and software engineering											
	techniques.												
	• •	nt and evaluate a computer-	based s	yste	em t	o meet the des	ired needs	within	the realistic				
	constraints.												
1		and indulge in research usin	-			-	and meth	ods to d	lesign new				
	-	lyze, and interpret data to dr					··	1 .					
		current techniques, skills, ar as into the user environment				ary for compu	ting practi	ce and 1	ntegrate				
		knowledge to assess profes				alth social a	ad cultural	iccuos	during				
	profession practi		sionai,	leg	ai, ii	calui, social al		155005	uunng				
		l and global impact of comp	uting o	n in	divi	duals organiz	ations and	lsociety	J				
	•	nciples and responsibilities of	-				auono, and		,.				
		ely as a team member or a le		-		-	on goal in	a multic	lisciplinary				
	team.						U		1				
PO 10	Communicate eff	fectively with a range of aud	iences	usii	ng a	range of moda	alities inclu	uding w	ritten, oral and				
	graphical.												
PO 11	Apply the knowl	edge of technology and man	ageme	nt p	rinc	iples to manag	e projects	effectiv	vely in diverse				
	environments as	a member or a leader in the	team.										
		endent and life-long learning				-	_						
		tand and analyze a given rea							ng solutions.				
		appropriate tools and techni					on activitie	es.					
PO 15	Updating themse	lves through e-learning and	self-stu	ıdy	Updating themselves through e-learning and self-study courses.								

COs	COURSE OUTCOME						
CO 1	To understand the basics of Excel						
CO 2	2 To explore the working of Data						
CO 3	To acquire knowledge in creating & working with various charts						
CO 4	To analyze data using Histograms & Distribution statistics.						
CO 5	To apply Data using Pivot Tables						
Pre-requisites	Basic knowledge of MS Office Package						

]	Know	ledge	Level	S							
1.Remei	nberi	ng, 2.	Under	rstand	ling, 3	3.App	lying,	4.Ana	alyzin	g, 5.E	valuat	ing, 6.	Synth	esizing	5	
		(3/2)	1 indic	ates the		CO / PC			-	2-mediu	m 1-we	eak)				
СО	s	(0/2/			KLs			511, 5 50	POs			Juny	KI	LS		
									PO				1			
CO	1				3				PO				2	2		
									PO	3			6			
								PO				5				
CO	CO 2				1				PO				3			
			PO 6 PO 7							5 4						
CO	CO 3			2					PO			6				
	5		2					PO 9					6			
								PO 10					6			
CO	4		4						PO 1	1		6				
									PO 1			5				
~~	_							PO 13					6			
CO	5				6			PO 14 PO 15					6 5			
						<u>CO /</u>	PO Ma	nning	PUI	.5			2)		
		(3/2/	1 indic	ates the	e streng				rong, 2	2-mediu	m, 1-we	eak)				
		,						me Ou			,	,				
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
CO3	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO4	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2	
CO5	1	1	3	2	1	2	1	3	3	3	3	2	3	3	2	
COS			5	2	1	2		5	5	5	5	2	5	5	2	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus										
	Getting started With Excel	Periods	4								
Unit - I	Excel & Spreadsheets-Excel workbooks & worksheets-Printing from Exc	el-Saving your wo	ork-Excel								
	Add-Ins.										
	Working with Data	Periods	4								
Unit - II	Data Entry-Data Formats-Formulas and Functions-Cell Reference-Range Names-Sorting Data-Querying in										
Data-Importing Data from Files-Importing Data from databases.											
	Working with Charts	Periods	4								
Unit - III	Introducing Excel charts-Introducing scatter plots-Editing a chart-Identifying data points-Creating bubble										
Ollit - III	plots-Breaking a Scatter plot into categories-Plotting several variables.										
	Describing your data	Periods	4								
Unit - IV	Variables and Descriptive Statistics-Frequency Tables-Working with Hist	ograms-Working	with Stem and								
Unit - IV	Leafplots-Distribution statistics.										
	Tables Periods										
Unit - V	PivotTables-Two-way Tables-Computing Expected counts-Tables with O	rdinal Variables.									
	Total Periods 20										

Text Books	
1	Data Analysis with Microsoft Excel –Berk & Carey, Cengage Learning, Third Edition , 2010
References	
1	Microsoft Excel 2016 step by step –Curtis Fyre, Microsoft Press, 2015
2	Microsoft Excel –Essential Hints & Tips-Diane Griffiths, 2015
E-References	•
3	https://www.javatpoint.com/r-tutorial



MEN EMPOWERMEN		Elayampalayam, 11	ruchen	goue	-0.	57 205.					
Programme	B.Sc	Programme Code	UIT Regulations					2021-2022			
Department	Inform	ation Technology				Semester			5		
			Per	iods		Credit	Maximum Marks				
Course Code	C	ourse Name	per V	Neek							
			-	ГР	-+	С	CA	ESH	E Total		
	Infor	mation Security	5	0 0	_	3	25	75	100		
21U5ITE01											
COURSE	To understand th	e fundamentals of Cryptogra	aphy To	acqu	ir	e knowledge o	on standard	d algorit	hms used to		
OBJECTIVES	provide confiden	provide confidentiality, integrity and authenticity. To understand the various key distribution and									
	management sch	anagement schemes.									
POs		PROGRAMME OUTCOME									
PO 1	Apply the knowl	pply the knowledge of mathematics, science and computing in the core information technologies									
PO 2	Build software sy	Build software systems and apply the technologies in various fields of Computer Technology, including									
	hardware problei	aardware problems, Web site development and management, databases, and software engineering									
	techniques.										
PO 3	Design, impleme	nt and evaluate a computer-	based s	ysten	1 to	o meet the des	ired needs	within	the realistic		
	constraints.										
PO 4		and indulge in research usi	-			-	and meth	ods to c	lesign new		
	-	lyze, and interpret data to di									
PO 5		current techniques, skills, and			SS	ary for compu	ting practi	ce and i	ntegrate		
		is into the user environment			1.	141 1			4		
PO 6	profession practi	knowledge to assess profes	sional,	legal,	, n	ealth, social af	ia cultural	issues	during		
PO 7		l and global impact of comp	uting o	n indi	vi	duals organiz	ations and	1 societ	7		
PO 8	•	nciples and responsibilities				-	utions, un	a societ	,.		
PO 9		ely as a team member or a l				-	on goal in	a multio	lisciplinary		
	team.	,					8		I J		
PO 10	Communicate ef	ectively with a range of aud	liences	using	a	range of moda	alities incl	uding w	ritten, oral and		
	graphical.					-		-			
PO 11	Apply the knowl	edge of technology and man	agemei	nt prii	nci	ples to manag	e projects	effectiv	vely in diverse		
	environments as	a member or a leader in the	team.								
PO 12	Engage in indepe	ndent and life-long learning	for con	ntinue	ed	professional d	evelopme	nt.			
PO 13	-	tand and analyze a given rea		-				-	ng solutions.		
PO 14		appropriate tools and techn	-				on activiti	es.			
PO 15	Updating themse	lves through e-learning and	self-stu	dy co	our	ses.					

COs	COURSE OUTCOME						
CO 1	To know about the security model.						
CO 2	o know and understand about the various security attacks and ethics in Information Security.						
CO 3	Γο understand the Information security policy, standards, and practices.						
CO 4	To know and mange the risk management.						
CO 5	Demonstrate the Physical Security in the organization and in workplace.						
Pre-requisites	Basics of Networks						

]	Know	ledge	Level	S								
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	3.App	lying,	4.Ana	alyzin	g, 5.E [,]	valuat	ing, 6.	Synth	esizing	3		
		(3/2)	1 indic	ates the				Mappin	-	-mediu	m, 1-we	eak)					
CC	s	(3/2/			KLs			511, 5 50	POs			Juny	KI	s			
	5								PO				1				
CO	1				3				PO				2				
									PO	3		6					
									PO	4			5				
CO	2				2				PO				3				
									PO				5				
00	2		PO 7 4														
CO	3		1					PO 8 PO 9				6					
								PO 10				6					
CO	4		2 PO 11								6						
									PO 1			5					
								PO 13 6						ō			
CO	5				2			PO 14 6									
									PO 1	.5			5	5			
		(2)	(1 • 1•	1			PO Ma				1	1 \					
		(3/2/	1 indic	ates the	streng						m, 1-we	eak)					
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	me Out PO8	PO9	POs) PO10	PO11	PO12	PO13	PO14	PO15		
CO1																	
C01	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1		
CO2	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1		
CO3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1		
CO4	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1		
CO5	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1		

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

ontent of the	Syllabus										
	Introduction	Periods	12								
	What is Security? Critical Characteristics of Information - NSTISSC Security Model - Components of an										
Unit - I	Information System - Securing Components - Balancing information security and access - Approaches to										
	information security implementation - SDLC - Securing the SDLC - Sec SDLC - security professional and										
	the organization.										
	Security Investigation	Periods	12								
Unit - II	Need for security - Threats - Attacks - Legal, Ethical, and professional iss	ues in information	n security: Law								
Ollit - II	and ethics in information security -Ethics and information security.										
	Security Analysis Periods 12										
	Introduction to Risk Management - Risk Identification: Asset identification and valuation and prioritization										
Unit - III	- Data classification and Management - Threat Identification - Vulnerability	ity Identification.	Risk Assessme								
	- Risk control strategies - Selecting a risk control strategy.										
	Logical Design Periods 12										
Unit - IV	Information security policy, standards, and practices - Design of security a	architecture - Con	tinuity								
Onit IV	strategies: Business Impact Analysis - Incident Response plan - Disaster H	Recovery plan - B	usiness								
	Continuity plan.										
	Physical Design	Periods	12								
	Security Technologies: Firewalls - Intrusion Detection and Prevention System	stems. Cryptograp	ohy: RSA, DES								
Unit - V	Algorithms -Encryption Methodologies - cryptography tools. Physical security: physical access controls -										
	Interception of Data - Mobile and portable systems -Special consideration	s for physical sec	urity								
	professionals.										
	Total Periods		60								

Text Books	
1	1.A. Angel Freedaraja, K. Benitlin subha "Information Security" Sams Publishers, Chennai. 2013.
References	
1	1.Timothy J. Shimell, Jonathan M Spring "Introduction to Information Security" Syngress Elsevier, 2014.
2	2.Mark Stamp, "Information Security", A John wiley & sons, Inc Publication, New Jersey. 2nd Edition.
E-References	
1	1.www.infosec.gov.hk/english/information/what.html
2	2.www.uniassignment.com



MEN EMPOWERMEN		Elayampalayam, 11	rucnei	1goo	ae-o	37 205.					
Programme	B.Sc	Programme Code	UIT Regulations						2021-2022		
Department	Inform	ation Technology				Semester			5		
			Per	riod	um Marl	ks					
Course Code	Course Name per Week										
			-	Т	Р	С	CA	ESE	Total		
21115177702	Cloud Computing 5 0 0 3 25 75 10										
21U5ITE02			LI				1				
COURSE	To provide unde	rstanding on concepts & tecl	nnolog	ies a	asso	ciated with Clo	oud Comp	uting			
OBJECTIVES POs		PRO	GRAM	IME	E OU	TCOME					
								. 1	1 .		
PO 1		edge of mathematics, scienc									
PO 2		ystems and apply the techno									
	techniques.	ms, Web site development a	iu mai	lage	men	it, databases, a	nu sonwai	e engine	eening		
PO 3	-	ent and evaluate a computer-	hased	svet	em t	o meet the des	ired needs	within t	the realistic		
105	constraints.	sin und evaluate a computer	oused	5950	ciii t		inea neeas	within t			
PO 4		e and indulge in research usi	ng rese	arc	h bas	sed knowledge	e and meth	ods to de	esign new		
	experiments, analyze, and interpret data to draw valid conclusions.										
PO 5	Select and apply	current techniques, skills, an	nd tool	s ne	cess	ary for compu	ting practi	ce and in	ntegrate		
		ns into the user environment									
PO 6	Apply contextua	l knowledge to assess profes	sional,	leg	al, h	ealth, social a	nd cultural	issues c	luring		
	profession practice.										
PO 7		Analyze the local and global impact of computing on individuals, organizations, and society.									
PO 8	Apply ethical principles and responsibilities during professional practice.										
PO 9		vely as a team member or a l	eader t	o ac	com	plish a comm	on goal in	a multid	lisciplinary		
DO 10	team.	······································					. 1. 4	1			
PO 10		fectively with a range of auc	iences	US1	ng a	range of mod	alities inclu	uding wi	ritten, oral and		
PO 11	graphical.Apply the knowledge of technology and management principles to manage projects effectively in diverse										
FOII		a member or a leader in the	-	nt p	orme	ipies to manag	ge projects	enective	ery in urverse		
PO 12		endent and life-long learning		ntir	nued	professional	levelopme	nt.			
PO 12		stand and analyze a given rea				-	-		ng solutions.		
PO 14		appropriate tools and techn							<u> </u>		
PO 15		elves through e-learning and									

COs	COURSE OUTCOME
CO 1	Analyze the trade-offs between deploying applications in the cloud and over the local infrastructure.
CO 2	Compare the advantages and disadvantages of various cloud computing platforms.
CO 3	Program data intensive parallel applications in the cloud.
CO 4	Analyze the performance, scalability, and availability of the underlying cloud technologies and software.
CO 5	Solve a real-world problem using cloud computing through group collaboration.
Pre-requisites	Basic Knowledge of Network

					1	Know	ledge	Level	S													
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	S.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	5							
								Mappin	-													
		(3/2/	1 indic		-	th of co	orrelation	on, 3-st	-	2-mediu	m, 1-we	eak)										
CC)s]	KLs				POs				KI	_S								
CO	1				2			PO 1 1 PO 2 2 PO 3 6 PO 4 5 PO 5 3 PO 6 5 PO 7 4 PO 8 6 PO 9 6														
CO	2				1																	
0	2				1								KLs 1 2 6 5 3 5 4 6 6 6 6 6 6 6 6 5 6 6 5 6 6 5 6 6 6 6									
CO	3				3																	
									PO	9			6	j								
			PO 10 6																			
CO	4				4			PO 11					6									
									PO 1													
00	-				-				PO 1													
CO	5				5				PO 1 PO 1													
						<u> </u>	PO Ma	nning	POI	.5												
		(3/2)	1 indic	ates the	e streng				rong 🤈	2-mediu	m 1-we	eak)										
		(3/2/	1 maie		streng			ime Ou	-			Jun)										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15							
CO1	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1							
CO2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1							
CO3	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1							
CO4	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2							
CO5	1	1	2	3	1	3	2	2	2	2	2	3	2	2	3							

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus									
	Cloud Computing Foundation	Periods	12							
Unit - I	Introduction to Cloud Computing - Move to Cloud Computing - Types of Cloud - Working of Cloud									
	Computing									
	Cloud Computing Architecture Periods 12									
Unit - II	Cloud Computing Technology - Cloud Architecture - Cloud Modeling and Design - Virtualization :									
Unit - II	Foundation - Grid,Cloud and Virtualization - Virtualization and Cloud Computing									
	Data Storage and Cloud Computing Periods 12									
Unit - III	Data Storage - Cloud Storage - Cloud Storage from LANs to WANs - Cloud Computing Services : Cloud									
Unit - III	Services - Cloud Computing Elements- Understanding Services and Appl	ications by type-C	Cloud Services-							
	Cloud Computing at Work									
	Cloud Computing and Security	Periods	12							
Risks in Cloud Computing - Data Security in Cloud - Cloud Security Services - Cloud Computing Tools :										
Unit - IV	Unit - IV Tools and Technologies for Cloud - Cloud Mashups - Apache Hadoop - Cloud Tools									
	Cloud Applications Periods 12									
Unit V	Moving Applications to the Cloud - Microsoft Cloud Services - Google C	loud Applications	- Amazon							
Unit - V	Cloud Services - Cloud Applications									
	Total Periods 60									

Text Books	
1	Cloud Computing – A Practical Approach for Learning and Implementation, A.Srinivasan and J.Suresh,
	Pearson India Publications, 2014
References	
1	Cloud Computing web – based applications at change the way you work & collaborate online", Michael
	miller, pearson.
2	Cloud Computing, 2nd edition, Dr.Kumarsaurabh, wiley India.
3	Cloud Computing a practical approach, McGraw Hills.
4	Cloud Computing Implementation, Management, & Security, John W. Rittinghouse, James F. Ransome,
	Special Indian Edition.
E-References	
1	webobjects.cdw.com
2	www.forbes.com
3	cloudcomputinglegal.weebly.com



OMEN EMPOWERMEN		Elayampalayam, 11	ruche	ngo	ue-o	57 205.					
Programme	B.Sc	Programme Code			2021-2022						
Department	Inform	ation Technology	Semester								
			Pe	riod	s	Credit	Maxim	um Mar	ks		
Course Code	Course Name per Week										
			L	Т	Р	С	CA	ESE	E Total		
	WEB	TECHNOLOGY	5	0	0	3	25	75	100		
21U5ITE03			5	Ŭ	Ŭ	5	20	15	100		
COURSE	To develop dyna	mic web page using scriptin	g lang	uage	es an	d various style	es with CS	S and H	ITML5 where		
OBJECTIVES	scripting codes a	scripting codes are embedded into HTML document for interactive presentation effect.									
POs		PROGRAMME OUTCOME									
PO 1	Apply the knowl	edge of mathematics, scienc	e and	com	putii	ng in the core	informatio	n techno	ologies		
PO 2	Build software s	ystems and apply the technol	logies	in v	ariou	us fields of Co	mputer Te	chnolog	gy, including		
	hardware problems, Web site development and management, databases, and software engineering							eering			
	techniques.	techniques.									
PO 3		ent and evaluate a computer-	based	syst	em t	o meet the des	ired needs	within	the realistic		
	constraints.										
PO 4		e and indulge in research using	0			U	e and meth	ods to d	lesign new		
	-	lyze, and interpret data to dr									
PO 5		current techniques, skills, an				ary for compu	ting practi	ce and i	ntegrate		
		ns into the user environment									
PO 6		l knowledge to assess profes	sional	, leg	al, h	ealth, social ai	nd cultural	issues (during		
PO 7	profession practi		4		1	1 .1		1			
PO 7 PO 8	•	l and global impact of comp nciples and responsibilities					ations, and	i society	ý		
PO 9		vely as a team member or a lo	-	-			on goal in	a multic	lisciplinary		
109	team.	cry as a team member of a h			com	ipiisii a comin	Jii goai iii	a muni	inscriptinary		
PO 10		fectively with a range of aud	iences	s usi	nga	range of mode	alities inclu	ıding w	ritten oral and		
1010	graphical.	receivery with a range of add	inemeet	5 451	iig u	runge of mou	anties men	uanig w	inten, orar and		
PO 11		edge of technology and man	ageme	ent r	rinc	iples to manag	e projects	effectiv	vely in diverse		
		a member or a leader in the	-	Г			· I J				
PO 12		endent and life-long learning		ontir	nued	professional d	levelopme	nt.			
PO 13		tand and analyze a given rea				-			ng solutions.		
PO 14	-	appropriate tools and techni		-				-			
PO 15	Updating themse	elves through e-learning and	self-st	udy	cour	ses.					

COs	COURSE OUTCOME
CO 1	Define the knowledge about HTML document with element types, hyperlinks, images, list, tables and forms
CO 2	Understand the concept of CSS for dynamic presentation effect in HTML and XML documents.
CO 3	Describe the mark-up languages for processing, identifying and presenting information in web pages.
CO 4	Apply scripting languages in HTML document to add interactive components to web pages.
CO 5	Illustrate the web technology concept to create schemas and dynamic web pages.
Pre-requisites	Basic Knowledge of web page

					I	Know	ledge	Level	S							
1.Remen	nberi	ng, 2.	Under	rstand	ling, 3	App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	5	
								Mappin	-							
		(3/2/	1 indic		-	th of co	orrelatio	on, 3-st	-	2-mediu	m, 1-we	eak)				
CO	s				KLs				POs				KI			
									PO				1			
CO	1				1				PO 2 PO 2				4			
									PO -				6			
СО	2				2				PO				3			
	002								PO				5			
	CO 3							PO '	7		4					
CO			2						PO	8		6				
									PO			5				
			3						PO 1				5			
CO	4								PO 1 PO 1			4 6				
								PO 12 PO 13					6			
CO	5				3				PO 1			5				
	-				-			PO 15					6			
						CO /	PO Ma	pping			1					
		(3/2/	1 indic	ates the	e streng	th of co	orrelatio	on, 3-st	rong, 2	2-mediu	m, 1-we	eak)				
COs			-			Р	rogram	me Ou	tcome ((POs)		-				
COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
CO2	2	1	3	1	2	1	1	1	1	1	1	1	1	1	1	
CO3	2	1	3	1	2	1	1	1	1	1	1	1	1	1	1	
CO4	1	2	2	1	3	1	2	1	1	1	2	1	1	1	1	
CO5	1	2	2	1	3	1	2	1	1	1	2	1	1	1	1	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

	Fundamentals of HTML	Periods	12								
Unit - I	Understanding Elements: Root Elements-Metadata Elements Section Eler	nents-Heading El	ements.								
	Describing data types	-									
	HTML5 and its essentials	Periods									
	HTML5 and its essentials-Exploring New Features of HTML5-Next Gene	eration of Web De	evelopment-								
Unit - II	Structuring an HTML Document-Exploring Editors and Browsers Supported by HTML5-Creating and										
	Saving an HTML Document-Validating an HTML Document-Viewing an HTML Document-Hosting Web										
	Pages.										
	DHTML	Periods	12								
Unit - III	Introduction - Cascading Style sheets - DHTML Document Object Model and collections - Event Handling										
Unit - III	- Filters and Transitions - Data Binding.										
	JAVA & VB SCRIPT	Periods	12								
	Introduction- Language Elements - Objects of JavaScript- Other Objects.	VBSCRIPT: Intro	oduction-								
Unit - IV	Embedding VBScript Code in an HTML Document- CommentsVariables- Operators-Procedures-										
	Conditional Statements- Looping Constructs - Objects and VBScript - Co	okies.									
	EXTENSIBLE MARK-UP LANGUAGE	Periods	12								
	Introduction- HTML vs. XML- Syntax of the XML Document- XML Attributes- XML Validation- XML										
	introduction- if file vs. AML- Syntax of the AML Document- AML At		DTD- The Building Blocks of XML Documents-DTD Elements - DTD Attributes- DTD Entities- DTD								
Unit - V		ttributes- DTD E	ntities- DTD								
Unit - V			ntities- DTD								

Text Books	
1	N.P.Gopalan, J.Akilandeswari, Web Technology A Developerâ€ [™] s Perspective(Unit III, IV, V), PHI
	Learning Pvt.Ltd, 4th Edition,2011.
2	Kogent Learning Solutions Inc Kogent Learning Solutions Inc Dreamtech Press 2011
References	
1	AkankshaRastogi Web Technology K.Nath & Co Educational Publishers, 1st Edition 2012.
2	AnuranjanMisra, Arjun Kumar Singh Intoduction to Web Technology Laxmi Publication 2011.
3	C.Xavier World Wide Web Design with HTML TMH Publishers 2008.
E-References	
1	https://w3schools.sinsixx.com/dhtml/dhtml_intro.asp.htm
2	https://www.tutorialspoint.com/adobe_robohelp/adobe_robohelp_adding_dhtml_effects.htm



OMEN EMPOWERMEN		Elayampalayam, 11	rucheng	goae-	537 205.						
Programme	B.Sc	Programme Code		UIT Regulations							
Department	Inform	Information Technology Semester									
			Peri	ods	Credit	Maxim	um Mar	`ks			
Course Code		Course Name	per W	/eek							
			L T		С	CA	ESE	E Total			
	Pytho	on Programming) 0	4	25	75	100			
21U6ITC12		6 6 6									
COURSE	•To learn a dy	namic, interpreted (Byte co	de-Com	piled)	and high level	l programn	ning lan	guage.•To			
OBJECTIVES	know the basics	of algorithmic problem solv	ing •	To us	e Python data	structures -	lists, t	uples,			
	dictionaries.										
POs	PROGRAMME OUTCOME										
PO 1	Apply the knowl	edge of mathematics, science	e and co	mput	ing in the core	informatio	n techn	ologies			
PO 2	Build software systems and apply the technologies in various fields of Computer Technology, including										
	hardware problem	ns, Web site development a	nd mana	geme	nt, databases, a	and softwar	re engin	eering			
	techniques.										
PO 3	Design, implement and evaluate a computer-based system to meet the desired needs within the realistic										
	constraints.										
PO 4	Review literature and indulge in research using research based knowledge and methods to design new experiments, analyze, and interpret data to draw valid conclusions.										
PO 5	-	current techniques, skills, a				iting practi	co and i	ntegrate			
105		ns into the user environment			sary for compt	ing practi		integrate			
PO 6		l knowledge to assess profes			health, social a	nd cultural	issues	during			
	profession practi		,	0 /	,			U			
PO 7	Analyze the loca	l and global impact of comp	uting on	indiv	viduals, organiz	zations, and	1 society	٧.			
PO 8	Apply ethical pri	nciples and responsibilities	during p	rofes	sional practice.						
PO 9	Function effectiv	vely as a team member or a l	eader to	accor	nplish a comm	ion goal in	a multio	lisciplinary			
	team.										
PO 10		fectively with a range of auc	liences u	sing	a range of mod	alities incl	uding w	ritten, oral and			
	graphical.	1 6/ 1 1 1		. •	• 1 .	• .	<u> </u>	1 . 1.			
PO 11	11.0	edge of technology and man	U	t prin	ciples to manag	ge projects	effectiv	ely in diverse			
PO 12		a member or a leader in the endent and life-long learning		tinue	Introfessional	developme	nt				
PO 13		tand and analyze a given rea			-	_		ng solutions			
PO 14	-	appropriate tools and techn					-				
PO 15		lves through e-learning and	-								

COs	COURSE OUTCOME					
CO 1	To read and write simple Python programs.					
CO 2	o define Python functions and call them.					
CO 3	o develop Python programs with conditionals and loops.					
CO 4	To do input/output with files in Python and develop GUI based programs					
CO 5						
Pre-requisites	Know about Programming Languages					

					I	Know	ledge	Level	s							
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	3.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizinį	5	
		(3/2)	/1 indic	ates the				Mappin	-	2-mediu	m 1-we	eak)				
CC)s	(0) =			KLs			, 0 50	POs				KI	S		
									PO				1			
CC	1				2				PO				2			
									PO	3			6	5		
									PO	4			5	i		
CC	2				1				PO				3			
								PO 6					5			
			2					PO 7					4			
CC	CO 3		3					PO 8 PO 9					6 6			
								PO 10					6			
CC	4		4					PO 10					6			
00	•				·			PO 12				1				
								PO 13				6				
CC	5				5			PO 14				6				
								PO 15					5			
							PO Ma									
	1	(3/2/	1 indic	ates the	streng				-	2-mediu	m, 1-we	eak)				
COs		1	<u> </u>	1		1	-	me Ou				1			1	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		PO12				
CO1	2	3	1	1	2	1	1	1	1	1	1	2	1	1	1	
CO2	3	2	1	1	1	1	1	1	1	1	1	3	1	1	1	
CO3	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO4	1	1	1	2	2	2	1	1	1	1	1	1	1	1	2	
CO5	1	1	2	3	1	3	2	2	2	2	2	1	2	2	3	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

ontent of the	Syllabus										
	Python Overview, Data Types, Expressions:	Periods	10								
Unit - I	Python programming - variable, Datatype, Keywords, Literals, Operator,	Expression, type	conversion,								
Unit - I	Comments, input and output, Strings, Assignment and Comments - Nume	eric Data Types ar	d Character								
	Sets, Expressions.										
	Functions, Modules and Control Statements	Periods	14								
	Functions and Modules- Calling Functions, The math Module, The Main	Module, Program	Format and								
Unit - II	Structure and Running a Script from a Terminal Command Prompt - Itera	tion - for loop - S	election -								
Unit - II	Boolean Type, Comparisons, and Boolean Expressions, if-else Statements, One-Way Selection Statements										
	Multi-way if Statements, Logical Operators and Compound Boolean Expressions, Short- Circuit Evaluation										
	and Testing Selection Statements - Conditional Iteration - while loop.										
	Strings and Text Files	Periods	12								
	Strings-Accessing Characters and Substrings in Strings - Data Encryption	- Strings and Nu	mber Systems								
Unit - III	and String Methods- Text Files-Text Files and Format - Writing Text to a File - Writing Numbers to a File										
	Reading Text from a File - Reading Numbers from a File and Accessing and Manipulating Files and										
	Directories on Disk.										
	Lists and Dictionaries	Periods	12								
	Lists- List Literals and Basic Operators, Replacing an Element in a List, List Methods for Inserting and										
	Removing Elements, Searching and Sorting a List, Mutator Methods and the Value None, Aliasing and Sid										
Unit - IV	Effects, Equality and Tuples - Defining Simple Functions - Syntax, Parameters and Arguments, return										
	Statement, Boolean Functions and main function, Dictionaries-Dictionary Literals - Adding Keys and										
	Replacing Values - Accessing Values, Removing Keys and Traversing a Dictionary.										
	Design with Functions and Classes, Graphical User Interface	Periods	12								
	Design with Functions and Design with Classes - Functions as Abstractio	n Mechanisms - 1	Design with								
Unit - V	Recursive Functions and Managing a Programâ€ [™] s Namespace - Data M	Aodeling and Stru	cturing Classes								
Unit - v	with Inheritance and Polymorphism - Behavior of terminal based program	ns and GUI based	programs-								
	Coding simple GUI based programs- Other useful GUI resources- Case S	tudy: GUI based A	ATM.								
	Total Periods		60								

Text Books	
1	Kenneth A. Lambert, Martin Osborne, "Fundamentals of Python: First Programs, Cengage Learning",
	second edition, 2018
References	
1	1. Dr. S. Suresh kumar, "Problem Solving and Python Programming" Charulatha Publications, 2018.
2	2. Python Essential Reference (4th Edition): David Beazley.
3	3. Michal Jaworski, TarekZiade, "Expert Python Programming ", Packt Publishing, Second Revised edition,
	2016.
4	. Sam Washington, Dr. M. O. FaruqueSarker, "Learning Python Network Programming", Packt
	Publishing Limited, 2015.
E-References	
1	https://www.w3schools.com/python/1.
2	www.python.org/about/gettingstarted/

3	www.tutorialspoint.com/python/index.htm
4	. www.realpython.com/python-beginner-tips/



OMEN EMPOWERMEN		Elayampalayam, Ti	ruche	ngo	de-6.	37 205.				
Programme	B.Sc	Programme Code			tions	2021-2022				
Department	Inform	Information Technology Semester								
			Pe	eriod	s	Credit	Maxim	um Marl	ks	
Course Code	Course Name per Week									
			Р	С	CA	ESE	Total			
	Mobile An	plication Development	L 5	T 0	0	4	25	75	100	
21U6ITC13		pheation Development	0	7	2.5	15	100			
COURSE	•To understai	nd the concept of Android Te	echnol	logy	•	To understand	d applicati	ons of an	ndroid.•To	
OBJECTIVES	understand andro	oid web apps.								
POs	PROGRAMME OUTCOME									
PO 1	Apply the knowl	edge of mathematics, science	e and	com	putii	ng in the core	informatio	on techno	ologies	
PO 2	Build software s	ystems and apply the techno	logies	in v	ariou	us fields of Co	omputer Te	echnolog	y, including	
	hardware problems, Web site development and management, databases, and software engineering									
	techniques.	techniques.								
PO 3	Design, impleme	ent and evaluate a computer-	based	syst	em t	o meet the des	sired needs	s within t	the realistic	
	constraints.									
PO 4		e and indulge in research usi	-			-	e and meth	ods to d	esign new	
	*	lyze, and interpret data to da								
PO 5		current techniques, skills, and				ary for compu	iting pract	ice and in	ntegrate	
		ns into the user environment								
PO 6		l knowledge to assess profes	sional	l, leg	al, h	ealth, social a	nd cultura	l issues c	luring	
D0 7	profession practi			<u> </u>	1			1		
PO 7 PO 8		l and global impact of comp						d society	•	
PO 8 PO 9		inciples and responsibilities vely as a team member or a l				-		o multid	iccinlinem	
FO 9	team.	rely as a leally member of a r	eauer	to ac	com	ipristi a comm	on goar m	a munu	iiscipiinary	
PO 10		fectively with a range of auc	ionco	e 11ei	naa	range of mod	alities incl	uding w	ritten oral and	
1010	graphical.	rectively with a range of auc	incluces	5 051	ng a	range or mou	anties mei	uunig wi	inten, orar and	
PO 11	• •	ledge of technology and man	agem	ent r	rinc	inles to manag	e projects	effectiv	elv in diverse	
1011		a member or a leader in the	-		i inc.	ipies to manag	se projects	enceuv		
PO 12		endent and life-long learning		ontir	nued	professional	levelopme	nt.		
PO 12 PO 13		stand and analyze a given rea				-	_		ng solutions.	
PO 14									<u> </u>	
	Evaluate and use appropriate tools and techniques in developing application activities. Updating themselves through e-learning and self-study courses.									

COs	COURSE OUTCOME						
CO 1	Learning Basics and History of Mobile Software Development						
CO 2	Applying Application Design Essentials						
CO 3	Analyzing tools using to develop Android Apps						
CO 4	Linking Database with Apps						
CO 5							
Pre-requisites	Know about designing tools						

]	Know	ledge	Level	S							
1.Reme	mberi	ng, 2.	Under	stand	ling, 3	B.App	lying,	4.Ana	alyzin	g, 5.E	valuat	ing, 6.	Synth	esizinţ	5	
		(3/2/	1 indic	ates the				Mappin	-	2-mediu	m, 1-we	eak)				
СО	s	(0, 1,			KLs			,	POs				KI	LS		
									PO				1			
СО	CO 1				2				PO				2			
									PO	3			6	;		
									PO				5			
CO	CO 2			3					PO				3			
				PO 6 5												
CO	CO 3			4 PO 7 4 4 PO 8 6												
0	3				4				PO			6 6				
									PO 1							
CO	4				4				PO 1			6 6				
				PO 12						5						
									PO 1				6			
CO	5				1			PO 14				6				
						00 /			PO 1	.5			5			
		(2/)	1 india	atas tha	atrona		PO Ma		rong	madin	m, 1-we	nak)				
		(3/2/	1 muic		sueng			me Ou	-		111, 1-WE	.ak)				
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	2	3	105	1	2	100	107	100	109	1	1	1	1	1	1	
CO2	1	2	1	1	3	1	2	1	1	1				1	1	
											1	1	1			
CO3	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2	
CO4	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2	
CO5	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus								
	Introduction to Android:	Periods	10						
I	Introducing Android- Open Handset Alliance - The Android Platform - L	ayers of Android-	Android SDK -						
Unit - I	Kinds of Android Components.								
	Android Application Design Essentials:	Periods	10						
	Anatomy of an Android Applications - Android Terminology - Application	on Context - Activ	es - Services -						
Unit - II	Jnit - II Intents - Receiving and Broadcasting Intents-Interaction with server side applications-Using Google maps,								
GPS, WIFI-Integrating with Social Media Applications.									
	Android Application Design Essentials: Periods 10								
Unit - III	User Interface Screen Elements - Designing User Interfaces with Layouts	- Drawingand Wo	orking with						
	Animation.								
	Using Common Android APIs:	Periods	10						
Unit - IV	Using Android Data and Storage APIs- Managing data using SQLite - Sh	aring Databetweer	n Applications						
Unit - I v	with Content ProvidersIOS-Integrating Calendar and address book with se	ocial media applic	ations.						
	DDMS Periods 10								
Unit - V	Debug and Other View: DDMS - Dalvik DebugMonitor Server - LogCat	View.							
	Total Periods 50								

Text Books								
1	1.Jeff McWherter and Scott Gowell, "Professional Mobile Application Development", Wrox,							
	2012(Unit 2,4)							
2	2. Charlie Collins, Michael Galpin and Matthias Kappler, "Android in Practice", DreamTech, 2012.(Unit 5)							
3	3.Lauren Darcey and Shane Conder, "Android Wireless Application Development", Pearson Education, 2nd							
	Ed, 2011.(Unit 1,3,5)							
4	4.W. Frank Ableson, Robi Sen, Chris King, "Android in Action", 2nd Ed, Manning Publications Co., 2011.							
References								
1	1. James Dovey and Ash Furrow, "Beginning Objective C", Apress, 2012							
2	2. David Mark, Jack Nutting, Jeff LaMarche and Frederic Olsson, "Beginning iOS 6 Development:							
	Exploring the iOS SDK", Apress, 2013							
3	3.Chris Haseman, "Android Essentials", Apress Publications, 2008.							
4	4.James Steele, Nelson To, "The Android Developer's Cookbook-Building Applications with the							
	Android SDK", Addison-Wesley Publications, 2011.							
E-References								
1	1. https://www.cs.cmu.edu/~bam/uicourse/830spring09/BFeiginMobileApplication							
2	2. http://developer.android.com/develop/index.html							

REAL PROPERTY OF THE PROPERTY	ALL AND THE STORE STORE	VIVEKAN	ANDHA COLLEGE WOMEN (AU Elayampalayam, Ti	JTO	NON	Ю	U S)	ICES FO	DR	TUTUTION ISO 80012008
Progr	amme	B.Sc	Programme Code			UI	T	Regula	tions	2021-2022
Depa	rtment	Inform	ation Technology				Semester			6
Cours	e Code	С	ourse Name		eriod r We		Credit	Maxim	um Mark	S
				L	Т	Р	С	CA	ESE	Total
21U6	ITCP10	Mobile Appli	60	100						
List of I	Experime	nts								
1		How to make "	Hello World "applicat	ion i	n an	droi	d studio			
2		How to add tw	o numbers in Android	Appli	icati	on				
3		Create a simple	e calculator layout in ar	ndroi	d stu	idio.				
4		Develop an app	plication that uses even	t liste	eners	5.				
5		Create an And	oid Application in java	usin	ıg ar	nima	tions.			
6		How to build b	asic games in Android.							
7		How to create	a simple Alarm Clock u	ising	And	droic	1.			
8		Develop an app	plication that makes use	e of d	latab	base.				
9		Implement an a	application that creates	an al	ert v	wher	n receiving a	a messag	e.	
10		Create a simple	e project using Android	App	olica	tion	for internal	mark Ca	lculatio	ons.
11	1 Create a android application of a. Registration with SQLite database b. Login with SQLite database.									
12		Create an andro	oid application to conne	ect w	ith N	MyS	QL through	PHP		

A THOMAN AND AND A THOMAN AND AND A THOMAN AND AND AND AND AND AND AND AND AND A	ALL ANSTREEMENT	VIVEKAI	VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS) Elayampalayam, Tiruchengode-637 205.										
Progr	ramme	B.Sc	Programme Code			U	IT	Regulat	ions	20	21-2022		
Depa	rtment	Inform	ation Technology				Semester				6		
Course	e Code	C	Course Name		eriod • Wee		Credit	Maxim	ım Mar	ks			
				L	Т	Р	С	CA	ESE	Ξ	Total		
21U6	ITCP11	Python	Programming Lab	0	0	5	3	40	60		100		
List of I	Experimer	nts											
1	Write a	python program	n using Control stateme	ents									
2	Write a	python program	n using Functions and S	String	Op	erati	ions						
3	Write a	python program	n using List, Tuples and	l List	con	npre	hensions						
4	Write a	python program	n using Inheritance										
5	Write a	python program	n using Synchronization	1									
6	Write a	e a python program using Text Files											
7	Write a python program using Graphical user Interfaces												
8	Write a	python program	n using Exceptional Ha	ndlin	g								
9	Write a	python program	n using Classes and Ob	jects									
10	Write a	python program	n using Chat Applicatio	ons									

	VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS) Elayampalayam, Tiruchengode-637 205.									nland (10) HISCHART (10) HISSORAT
NOWEN EMPOWERNER		Elayampalayam, Th	ruchen	igoae	-63 /	205.				
Programme	B.Sc	Programme Code			UI	T	Regulati	ons	2021-2022	
Department	tion Technology				Semester	1			6	
Course Code	Course Name		eriods · Wee		Credit	Maximu	m Ma	arks		
		L	Т	Р	С	CA	E	SE	Total	
21U6ITCPR02	21U6ITCPR02 Project Work-II					3	40	6	50	100
		Project Wo	ork Pa	tteri	1					
FIRST REVIE	ZW:					(20 N	Aarks)			
3. Confirm	Platform (Langua nation Letter (fro of Internal Guide	age / Package Selected) om Company / Industry) e with Designation & Qual	ificati	on (i	n the	e company / I	ndustry)			
SECOND REV	/IEW:					(20 N	(larks)			
 Module DFD / 1 Estimation Completion 	 Modules in Project (Design Screens Sample) DFD / ERD / System Flow Diagram (Whichever Applicable) Estimated Time of Completion 									
FINAL REVIEW: (60 Marks)										
 Documentation Screens Shots DFD / ERD / System Flow Diagram (Whichever Applicable) Final Project Report (with executable format including complete source code) 										
	The Pas	ssing minimum shall be 4	0% 0	ut of	60 1	marks (24 M	arks)			



OMEN EMPOWERNER		Elayampalayam, Tiruchengode-637 205.									
Programme	B.Sc	Programme Code		U	IT	Regulat	tions	2021-2022			
Department	Inform	ation Technology			Semester			6			
			Period	ls	Credit	Maxim	um Marl	KS			
Course Code	с с	Course Name	per We	ek							
			L T	Р	С	СА	ESE	Total			
21U6ITS04	DESKT	OP PUBLISHING	2 0	0	2	25	75	100			
COURSE	• To provide a	¢ To provide a hands on experience in the Desktop Publishing Packages.									
OBJECTIVES POs		PROGRAMME OUTCOME									
PO 1	Apply the knowl	oply the knowledge of mathematics, science and computing in the core information technologies									
PO 2	Build software s	uild software systems and apply the technologies in various fields of Computer Technology, including									
	hardware problem	ardware problems, Web site development and management, databases, and software engineering									
	techniques.										
PO 3		Design, implement and evaluate a computer-based system to meet the desired needs within the realistic									
		constraints.									
PO 4		e and indulge in research usi	-		-	e and meth	ods to de	esign new			
	-	lyze, and interpret data to dr									
PO 5		current techniques, skills, an			ary for compu	ting praction	ce and in	ntegrate			
		ns into the user environment		-	1.1 . 1	1 1. 1	· .				
PO 6		l knowledge to assess profes	sional, leg	gal, h	ealth, social a	nd cultural	issues d	luring			
DO 7	profession practi		<i></i>	1	1 1 .		1				
PO 7		l and global impact of comp	-			ations, and	i society	•			
PO 8 PO 9		nciples and responsibilities			-	on goolin	o multid	icoinlinom			
PO 9	team.	vely as a team member or a le	eader to a	con	ipiisii a comm	on goar in a	a munna	iscipillary			
PO 10		fectively with a range of aud	ioncos us	naa	range of mod	alities inclu	iding w	ritten oral and			
1010	graphical.	iccuvery with a range of aut	nences us	ng a	range or mou	anties men	uunig wi	inch, orai allu			
PO 11	0 1	Apply the knowledge of technology and management principles to manage projects effectively in diverse									
1011		a member or a leader in the			ipies to manag	e projects	CITCUIN				
PO 12		endent and life-long learning		nued	professional of	levelopmer	nt.				
PO 13		tand and analyze a given rea			-	-		g solutions.			
PO 14		appropriate tools and techn						6			
PO 15		elves through e-learning and	-								

COs	COURSE OUTCOME						
CO 1	To know about hardware requirements						
CO 2	To know about Photoshop workspace						
CO 3	mplementing Image basics and colors						
CO 4	Implementing Corel DRAW like lines ,shapes and outlines						
CO 5	Working with shapes and filling the objects						
Pre-requisites	Know about some basic designing tools						

]	Know	ledge	Level	S									
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	S.App	lying,	4.Ana	alyzin	g, 5.E	valuat	ing, 6.	Synth	esizing	Ş			
		(3/2)	1 indic	ates the				Mappin	0	2-mediu	m 1-we	eak)						
СО	s	(3/2/			KLs			511, 5 50	POs			Juny	KI	LS				
									PO				1					
CO	1				2				PO				2	!				
									PO	3			6	ō				
									PO				5					
CO	CO 2			2					PO :				3					
				PO 6								5						
CO	CO 3			4														
CO	3				4				PO				4 6 6 6					
									PO 1									
CO	4				5				PO 1				6	6 6				
							PO 12				5							
									PO 1				6	j				
CO	5				5			PO 14				6						
						~~~			PO 1	5			5	i				
		(2)	1 india	ataa tha	atuar -		PO Ma			) mad:		ale)						
	I	(3/2/	1 indic	ates the	streng				tcome (	2-mediu	m, 1-we	eak)						
COs	PO1	PO2	PO3	PO4	PO5	r PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15			
C01	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1			
CO2	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1			
CO3	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2			
CO4	1	1	2	3	1	3	2	2	2	2	2	3	2	2	3			
CO5	1	1	2	3	1	3	2	2	2	2	2	3	2	2	3			

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

	INTRODUCTION:	Periods	5						
Unit - I	Hardware Requirement for DTP - Font Types - Text Organization - Desi	gn Common Medi	a Publication						
	Introducing Adobe Photoshop CS6:	Periods	5						
Unit - II	Knowing when to use Photoshop - Looking at What's New in Photo	shop CS6. Explor	ing the						
Photoshop Workspace: Understanding the Toolbox and tool options bar - Exploring the Photoshop Mer									
	Bar - Exploring Panels - Configuring Presets.								
	Performing Image Basics:	Periods	5						
	Exploring File Types - Resizing Files and Adjusting Resolution - Croppi	Exploring File Types - Resizing Files and Adjusting Resolution - Cropping and Straightening Images.							
Unit - III	Understanding Colors: Knowing Color Basics - Working in Different Col	or Modes. Learnin	ng All About						
	Layers: Introducing Layers - Manipulating Layer Masks. Working with S	elections: Using t	he Selection						
	Tools.								
	CorelDraw X7:	Periods	5						
	Starting and Setting up - CorelDRAW basics - CorelDRAW workspace tour. Lines, Shapes and outlines:								
Unit - IV	Working with lines, outlines, and brushstrokes: Drawing Lines - Formatting lines and outlines Adding								
	arrowheads to lines and curves. Drawing Shapes: Drawing rectangles, and Squares - Drawing ellipses,								
	circles, arcs, and pie Shapes.								
	Shaping objects:	Periods	5						
Unit - V	Using curve objects - Selecting and moving nodes. Text: Artistic Text - P	aragraph Text - A	pplying color						
Unit - V	Text - Fitting text to a path. FILLING OBJECTS: Applying Uniform fills	- Applying fount	ain fills -						
	Applying pattern fills - Applying texture fills.								

Text Books	
1	• Lisa DaNae Dayley, Brad Dayley, "Adobe Photoshop CS6 BIBLE The Comprehensive, Tutorial
	Resource", John Weley & Sons, Inc, 2012.
2	• CorelDRAW X7 User Guide, 2014 Coral Corporation.
References	
1	• Shirish Chavan, "Rapidex DTP Course Book", Desktop Publishing.
E-References	
1	• https://www.javatpoint.com/photoshop
2	• https://www.photoshopessentials.com/basics/
3	• https://www.javatpoint.com/coreldraw
4	• https://learn.corel.com/graphics-tutorials/



	Elayampalayam, 11	rucne	ngoo	16-0	57 205.			
B.Sc	B.Sc Programme Code UIT Regulations							2021-2022
Information Technology Semester								
		Pe	riod	s	Credit	Maxim	um Mar	ks
		-			С	СА	ESF	E Total
Ma	chine Learning							100
			Ŭ	Ŭ	0		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	100
To understand th	e need for machine learning	for va	riou	s pro	oblem solving	To study t	he vario	ous supervised,
semi-supervised	and unsupervised learning a	lgorith	nms i	in m	achine learnin	gTo under	stand th	e latest trends in
machine learning	5							
	PRO	GRAN	/MF	EOU	TCOME			
	•			-	-			
		-				-	-	
	ns, web site development a	na mai	nage	men	t, databases, a	nd softwar	re engin	eering
-	ant and evaluate a computer	based	evet	om t	o meet the des	ired needs	within	the realistic
	and indulge in research usi	ng res	earcl	h bas	sed knowledge	e and meth	ods to d	esign new
	•	-			-			
	· · · · · · · · · · · · · · · · · · ·					ting practi	ce and i	ntegrate
IT-based solution	ns into the user environment	effect	ivel	у.				
Apply contextual	l knowledge to assess profes	sional	, leg	al, h	ealth, social a	nd cultural	issues	during
•	• • •				-	ations, and	l society	/.
		-	-					
Function effectiv	ely as a team member or a l	eader	to ac	com	plish a comm	on goal in	a multic	lisciplinary
team.								
	fectively with a range of aud	liences	s usi	ng a	range of mode	alities inclu	uding w	ritten, oral and
	adaa of tashnalaay and man	0.0000		min o	inlas to monos	a mucicata	offostiv	alu in divance
	0 01	U	ent p	rinc	iples to manag	ge projects	effectiv	ery in diverse
			ontin	ned	professional d	levelonme	nt	
					-			ng solutions.
•			-				-	
Updating themselves through e-learning and self-study courses.								
	Inform C Mac To understand th semi-supervised machine learning Apply the knowl Build software sy hardware problem techniques. Design, impleme constraints. Review literature experiments, ana Select and apply IT-based solution Apply contextual profession practii Analyze the loca Apply ethical pri Function effectiv team. Communicate eff graphical. Apply the knowl environments as Engage in indeped Ability to unders Evaluate and use	B.Sc       Programme Code         Information Technology         Course Name         Machine Learning         To understand the need for machine learning semi-supervised and unsupervised learning a machine learning         PROO         Apply the knowledge of mathematics, science         Build software systems and apply the technol hardware problems, Web site development and techniques.         Design, implement and evaluate a computer-constraints.         Review literature and indulge in research usin experiments, analyze, and interpret data to dr Select and apply current techniques, skills, an IT-based solutions into the user environment Apply contextual knowledge to assess profess profession practice.         Analyze the local and global impact of comp Apply ethical principles and responsibilities of Function effectively as a team member or a leaterm.         Communicate effectively with a range of aud graphical.         Apply the knowledge of technology and man environments as a member or a leader in the Engage in independent and life-long learning Ability to understand and analyze a given rea	B.Sc       Programme Code         Information Technology       Pet         Course Name       per         L       L         Machine Learning       5         To understand the need for machine learning algorith machine learning       PROGRAM         Apply the knowledge of mathematics, science and Build software systems and apply the technologies hardware problems, Web site development and ma techniques.       PROGRAM         Design, implement and evaluate a computer-based constraints.       Review literature and indulge in research using resexperiments, analyze, and interpret data to draw va Select and apply current techniques, skills, and too IT-based solutions into the user environment effect         Apply contextual knowledge to assess professional profession practice.       Analyze the local and global impact of computing Apply ethical principles and responsibilities during Function effectively as a team member or a leader team.         Communicate effectively with a range of audiencest graphical.       Apply the knowledge of technology and managemeenvironments as a member or a leader in the team.         Engage in independent and life-long learning for complicate and use appropriate tools and techniques in the tean.       Engage in independent and life-long learning for complicate and the tean in the tean.	B.Sc       Programme Code         Information Technology $Period$ Information Technology $Period$ Course Name $Period$ L       T         Machine Learning       5       0         To understand the need for machine learning algorithms is machine learning       PROGRAMME         Apply the knowledge of mathematics, science and com       PROGRAMME         Apply the knowledge of mathematics, science and com       Pull         Build software systems and apply the technologies in v. hardware problems, Web site development and manage techniques.       Design, implement and evaluate a computer-based syste constraints.         Review literature and indulge in research using researcl experiments, analyze, and interpret data to draw valid constraints.       Select and apply current techniques, skills, and tools ne IT-based solutions into the user environment effectively.         Apply contextual knowledge to assess professional, leg profession practice.       Analyze the local and global impact of computing on in Apply ethical principles and responsibilities during profenstion effectively as a team member or a leader to act team.         Communicate effectively with a range of audiences using graphical.       Apply the knowledge of technology and management penvironments as a member or a leader in the team.         Engage in independent and life-long learning for contint Ability to understand and analyze a given real-time profexel and use appropriate tools and techniques in determines in the tean	B.ScProgramme CodeUIInformation TechnologyImportant (Important (Import	Information TechnologySemesterCourse Name $Periods$ Credit $Periods$ Credit $Periods$ $Periods$ Credit $Periods$ $Periods$ $Periods$ $L$ $T$ $P$ $C$ Machine Learning $5$ $0$ $0$ $3$ $To$ understand the need for machine learning for various problem solving semi-supervised and unsupervised learning algorithms in machine learningPROGRAMME OUTCOMEApply the knowledge of mathematics, science and computing in the coreBuild software systems and apply the technologies in various fields of Cohardware problems, Web site development and management, databases, atechniques.Design, implement and evaluate a computer-based system to meet the desconstraints.Review literature and indulge in research using research based knowledgeexperiments, analyze, and interpret data to draw valid corclusions.Select and apply current techniques, skills, and tools necessary for compute IT-based solutions into the user environment effectively.Apply contextual knowledge to assess professional, legal, health, social and profession practice.Analyze the local and global impact of computing on individuals, organizApply ethical principles and responsibilities during professional practice.Communicate effectively with a range of audiences using a range of modi graphical.Apply the knowledge of technology and management principles to managenvironments as a membe	B.ScProgramme CodeUITRegulaInformation TechnologySemesterCourse Name $Periods$ CreditMaxim $per Week$ $I$ $T$ $P$ $C$ $CA$ Machine Learning $5$ $0$ $0$ $3$ $25$ To understand the need for machine learning for various problem solving To study the semi-supervised and unsupervised learning algorithms in machine learning To under machine learning $T$ $P$ $C$ $CA$ PROGRAMME OUTCOMEApply the knowledge of mathematics, science and computing in the core informatioBuild software systems and apply the technologies in various fields of Computer Te hardware problems, Web site development and management, databases, and software techniques.Design, implement and evaluate a computer-based system to meet the desired needs constraints.Review literature and indulge in research using research based knowledge and meth experiments, analyze, and interpret data to draw valid conclusions.Select and apply current techniques, skills, and tools necessary for computing practition profession practice.Analyze the local and global impact of computing professional practice.Function effectively as a team member or a leader to accomplish a common goal in team.Communicate effectively with a range of audiences using a range of modalities inclugraphical.Apply the knowledge of technology and management principles to manage projects environments as a member or a leader in the team.Engage in independent and life-long learning for continued professional devel	B.Sc       Programme Code       UT       Regulations         Information Technology       Semester       Image: Semester       Semester         Course Name $per Week$ Image: Semester       Semester         Machine Learning       5       0       0       3       25       75         To understand the need for machine learning for various problem solving To study the varie semi-supervised and unsupervised learning algorithms in machine learning To understand th machine learning       PROGRAMME OUTCOME         Apply the knowledge of mathematics, science and computing in the core information technolog hardware systems and apply the technologies in various fields of Computer Technolog hardware problems, Web site development and management, databases, and software engin techniques.         Design, implement and evaluate a computer-based system to meet the desired needs within constraints.       Review literature and indulge in research using research based knowledge and methods to de experiments, analyze, and interpret data to draw valid conclusions.         Select and apply contextual knowledge to assess professional, legal, health, social and cultural issues of profession practice.         Apply the local and global impact of computing professional practice.         Function effectively as a team member or a leader to accomplish a common goal in a multic team.         Communicate effectively with a range of audiences using a range of modalities including w graphical.         Apply the knowledge of technology and management principles to manage

COs	COURSE OUTCOME						
CO 1	Understand Learning Problems						
CO 2	To know and understand about Neural Networks and Genetic Algorithms						
CO 3	Understand about various theorems						
CO 4	To understand and know about Instant Learning						
CO 5	To know about set rules						
Pre-requisites	Basic Knowledge of Soft Computing						

					l	Know	ledge	Level	s						
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	S.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	Ş
		(3/2)	1 indic	ates the				Mappin	-	-mediu	m, 1-we	eak)			
СО	s	(0/2/			KLs			<u>, , , , , , , , , , , , , , , , , , , </u>	POs			Juir)	KI	_s	
	~								PO				1		
CO	1				3				PO				2		
									PO	3			6		
									PO				5		
CO	2				3				PO :				3		
									PO				5		
	2						PO 7 PO 8				4				
CO	3		4						PO a PO a			6 6			
								PO 10				6			
СО	4		3					PO 11					6		
								PO 12				5			
								PO 13				6			
CO	5		4					PO 14				6			
									PO 1	5			5		
		(2)2	(1 • 1•	1			PO Ma		-		1	1 \			
	1	(3/2/	1 indic	ates the	streng				-		m, 1-we	eak)			
COs	COs Programme Outcome (POs)					DO11	DO 10	DO 12	DO14	DO15					
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10		PO12	PO13		PO15
CO1	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1
CO2	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1
CO3	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2
CO4	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1
CO5	1	1	1	2	2	2	1	1	1	1	1	2	1	1	2

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

	Introduction Periods 1									
II:4 I	Learning Problems - Perspectives and Issues - Concept Learning - Versio	n Spaces and Can	didate							
Unit - I	Eliminations - Inductive bias - Decision Tree learning - Representation - A	Algorithm Heurist	tic Space Seat							
	NEURAL NETWORKS AND GENETIC ALGORITHMS	Periods	12							
Unit - II	Neural Network Representation - Problems - Perceptrons - Multilayer Network	tworks and Back l	Propagation							
Unit - II	Algorithms - Advanced Topics - Genetic Algorithms - Hypothesis Space	Search - Genetic I	Programming							
	Models of Evaluation and Learning.									
	BAYESIAN AND COMPUTATIONAL LEARNING	Periods	12							
	Bayes Theorem - Concept Learning - Maximum Likelihood - Minimum Description Length Principle -									
Unit - III	Bayes Optimal Classifier - Gibbs Algorithm - NaÃ-ve Bayes Classifier - Bayesian Belief Network - EM									
	Algorithm - Probability Learning - Sample Complexity - Finite and Infinite Hypothesis Spaces - Mistake									
	Bound Model.									
	INSTANT BASED LEARNING	Periods	12							
Unit - IV	K- Nearest Neighbour Learning - Locally weighted Regression - Radial Basis Functions - Case Based									
	Learning.									
	ADVANCED LEARNING	Periods	12							
	Learning Sets of Rules - Sequential Covering Algorithm - Learning Rule Set - First Order Rules - Sets of									
Unit - V	First Order Rules - Induction on Inverted Deduction - Inverting Resolution - Analytical Learning - Perfect									
	Domain Theories - Explanation Base Learning - FOCL Algorithm- Reinforcement Learning - Task -									
	Q-Learning - Temporal Difference Learning									
	Total Periods		60							

Text Books	
1	Tom M. Mitchell, ―Machine Learning, McGraw-Hill Education (India) Private Limited, 2013
References	
1	Ethem Alpaydin, ―Introduction to Machine Learning (Adaptive Computation and Machine Learning),
	The MIT Press 2004.
2	Stephen Marsland, ―Machine Learning: An Algorithmic Perspective, CRC Press, 2009.
E-References	
1	www.tutorialspoint.com



2021-2022							
6							
5							
Total							
100							
100							
nteract with							
ogies							
, including							
ering							
techniques.							
e realistic							
constraints.							
sign new							
egrate							
ring							
sciplinary							
scipillary							
tten, oral and							
tion, orar and							
y in diverse							
.,							
solutions.							

COs	COURSE OUTCOME
CO 1	Analyze the trade-offs between deploying applications in the cloud and over the local infrastructure.
CO 2	Compare the advantages and disadvantages of various cloud computing platforms.
CO 3	Program data intensive parallel applications in the cloud.
CO 4	Analyze the performance, scalability, and availability of the underlying cloud technologies and software.
CO 5	Solve a real-world problem using cloud computing through group collaboration.
Pre-requisites	Basic Knowledge of Cryptography

					I	Know	ledge	Level	S							
1.Reme	mberi	ng, 2.	Under	rstand	ling, 3	6.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	5	
		(2.12	/4 • •					Mappin	-							
СО	~	(3/2/	1 indic		e streng KLs	th of co		on, 3-st	rong, 2 POs	2-mediu	$\frac{m, 1-we}{1}$	eak)	KI			
	8				NLS				POS				1			
CO	1				3				PO				2			
00					5				PO							
									PO				5			
CO	2				2				PO	5			3			
									PO				5			
	•						PO 7					4				
CO	3		3					PO 8 PO 9					6 6			
								PO 10					6			
CO	4		1					PO 10					6			
			-					PO 12					5			
								PO 13					6			
CO	5		5					PO 14				6				
							PO 15 5									
		(3/2)	1 indic	ates the	streng		PO Ma orrelatio		rong 🤇	2-mediu	m 1-we	eak)				
		(0, 2,						me Ou	-		,					
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO2	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO3	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	
CO4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
CO5	1	- 1	2	3	1	3	2	2	2	2	2	3	2	2	3	
	1	1	-	5	1	5	-	-	-	-	-	5	-	-		

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

Content of the S	Syllabus										
	Basics Periods 12										
	Distributed Database-Two General Problem-Byzantine General problem a	and Fault Tolerand	ce-Hadoop								
Unit - I	Distributed File System- Distributed Hash Table- ASIC resistance- Turing	g Complete. • (	Cryptography:								
	Hash function- Digital Signature - ECDSA- Memory Hard Algorithm- Ze	ro Knowledge Pro	oof.								
	Blockchain	Periods	12								
	Introduction- Advantage over conventional distributed database-Blockcha	in Network- Min	ing Mechanism-								
Unit - II	Distributed Consensus-Merkle Patricia Tree- Gas Limit- Transactions and	tributed Consensus-Merkle Patricia Tree- Gas Limit- Transactions and Fee- Anonymity- Reward- Chain									
	Policy- Life of Blockchain application- Soft & Hard Fork- Private and Public blockchain.										
	Distributed Consensus	Periods	12								
Unit - III	Nakamoto consensus- Proof of Work- Proof of Stake- Proof of Burn- Diff	ficulty Level- Syb	il Attack-								
Unit - III	Energy utilization and alternate.										
	Cryptocurrency	Periods	12								
Unit - IV	History- Distributed Ledger-Bitcoin protocols - Mining strategy and rewa	rds-Ethereum - C	onstruction-								
Unit - I v	DAO- Smart Contract- GHOST- Vulnerability- Attacks-Sidechain-Namecoin										
	Cryptocurrency Regulation	Periods	12								
Unit - V	Stakeholders- Roots of Bit coin- Legal Aspects-Crypto currency Exchang	e- Black Market a	und Global								
	Economy.										
	Total Periods		60								

Text Books	
1	Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder, Bitcoin and
	Cryptocurrency Technologies: A Comprehensive Introduction, Princeton University Press (July 19, 2016).
References	
1	Antonopoulos, Mastering Bitcoin: Unlocking Digital Cryptocurrencies
2	Satoshi Nakamoto, Bitcoin: A Peer-to-Peer Electronic Cash System
3	DR. Gavin Wood, "ETHEREUM: A Secure Decentralized Transaction Ledger," Yellow paper.2014.
4	Nicola Atzei, Massimo Bartoletti, and TizianaCimoli, A survey of attacks on Ethereum smart contracts
E-References	



MEN EMPOWERMEN	Elayampalayam, Tiruchengode-657 205.									
Programme	B.Sc	<b>B.Sc</b> Programme Code <b>UIT</b> Regulations								
Department	Information Technology Semester									
			Pe	riod	s	Credit	Maxim	um Mar	·ks	
Course Code		Course Name	per	Wee	ek					
			L	Т	Р	С	CA	ESE	E Total	
	Big	Data Analytics	5	0	0	3	25	75	100	
21U6ITE06	Dig	Data Analytics	5	0	0	5	25	15	100	
COURSE	To provide an ov	verview of an exciting growing	ng fiel	d of	big	data analytics	.To introdu	uce the t	cools required to	
OBJECTIVES	manage and anal	yze big data like Hadoop, N	oSql M	1apI	Redu	ice.				
POs		PROGRAMME OUTCOME								
PO 1	Apply the knowl	edge of mathematics, scienc	e and o	com	putii	ng in the core	informatio	on techno	ologies	
PO 2	Build software s	ystems and apply the technol	ogies	in v	ariou	us fields of Co	mputer Te	chnolog	gy, including	
	hardware problem	ms, Web site development a	nd mar	nage	men	t, databases, a	nd softwa	re engin	eering	
	techniques.									
PO 3	0 1	ent and evaluate a computer-	based	syst	em t	o meet the des	sired needs	within	the realistic	
	constraints.									
PO 4	4	e and indulge in research using	-			-	e and meth	ods to d	lesign new	
	-	lyze, and interpret data to dr								
PO 5		current techniques, skills, an				ary for compu	ting practi	ce and i	ntegrate	
		ns into the user environment								
PO 6		l knowledge to assess profes	sional,	, leg	al, h	ealth, social a	nd cultural	issues	during	
DO 7	profession practi			•	1	1 .1		1		
PO 7 PO 8		and global impact of comp inciples and responsibilities					ations, and	1 society	/.	
PO 9		vely as a team member or a lo	-	-			on goal in	a multic	lisciplingry	
103	team.	Tery as a learn member of a h		0 ac	com	ipiisii a comm	on goar m	a munu	iiscipiinary	
PO 10		fectively with a range of aud	iences	usi	nσa	range of mod	alities inclu	uding w	ritten oral and	
1010	graphical.	rectively with a range of add	iences	usi	ng u	runge of mou	untres mer	uuiiig w	inten, orar and	
PO 11		edge of technology and man	ageme	ent p	rinc	iples to manag	e projects	effectiv	elv in diverse	
		a member or a leader in the	-	. 1		1	J. I. J.		,	
PO 12		endent and life-long learning		ontin	ued	professional d	levelopme	nt.		
PO 13		stand and analyze a given rea				-	_		ng solutions.	
PO 14	-	appropriate tools and techni		-				-		
PO 15		elves through e-learning and								

COs	COURSE OUTCOME
CO 1	Understanding the basic concepts of data science and its functions
CO 2	Exploring cluster analysis methods
CO 3	Exploring big data from different perspective
CO 4	Understanding hadoop framework with HDFS concepts
CO 5	Process Data with MapReduce
Pre-requisites	Prior experience with any programming language.

					]	Know	ledge	Level	s							
1.Remer	nberi	ng, 2.1	Under	rstand	ling, 3	S.App	lying,	4.Ana	alyzin	g, 5.Ev	valuat	ing, 6.	Synth	esizing	5	
		(3/2)	1 india	ates the				Mappin	-	mediu	m 1 w	art)				
CO				KLs					lation, 3-strong, 2-medium, 1-w POs				KLs			
				IXL5				PO 1				1				
СО	CO 1			2				PO 2				2				
								PO 3				б				
								PO 4				5				
CO 2			2					PO 5				3				
								PO 6				5				
			_					PO 7				4				
CO 3		5					PO 8 PO 9				<u>6</u> 6					
								PO 10				6				
СО	CO 4		2					PO 11				6				
				_				PO 12				5				
								PO 13				б				
CO 5			5					PO 14				6				
									PO 15				5			
		(2)	/1 :	<b></b> .			PO Ma				1	• <b>1</b> - )				
	(3/2/1 indicates the strength of correlation, 3-strong, 2-medium, 1-weak) Programme Outcome (POs)															
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15	
CO1	2	3	105	1	2	100	107	100	109	1	1	1	1	1	1	
CO1 CO2	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
				3		3	2				2		2		3	
CO3	1	1	2		1			2	2	2		3		2		
CO4	2	3	1	1	2	1	1	1	1	1	1	1	1	1	1	
CO5	1	1	2	3	1	3	2	2	2	2	2	3	2	2	3	

Direct

1. Continuous Assessment Test I, II & Model

2. Assignment

3. End Semester Examinations

Indirect

1. Course End Delivery

ontent of the	Syllabus									
Unit - I	Introduction	Periods	12							
	Types of Digital Data: Classification of Digital Data. Introduction to Big Data: Characteristics of Data-									
	Evolution of Big Data- Definition of Big Data- Challenges with Big Data-What is big Data? Why big Data									
	Traditional Business Intelligence versus Big Data-A Typical Data Warehouse Environment- A Typical									
	Hadoop Environment.									
Unit - II	Big Data Analytics	Periods	12							
	Where do we Begin? What is Big Data Analytics? What is Big Data Analytics Isn't? Classification of									
	Analytics-Why Big Data Analytics Important? Challenges Facing Big Data-Data Science-Terminologies									
	used in Big Data Environment-Basically Available Soft State Eventual consistency (BASE).									
	The Big Data Technology Landscape: NoSQL: Hadoop	Periods	12							
	Where it is used? What is it? Types of NoSQL Databases- Why NoSQL - Advantages of NoSQL- What									
Unit - III	we miss with NoSQL? -Use of NoSQL in Industry- NoSQL Vendors- SQL vs NoSQL-									
Omt - m	NewSQL-comparision of SQL, NoSQL and NewSQL.Hadoop:Feature of Hadoop-Key Advantage of									
	Hadoop-versions of Hadoop- Overview of Hadoop Ecosystem- Hadoop Distribution- Hadoop versus									
	SQL- cloud Based Hadoop solution									
	Introduction to Hadoop	Periods	12							
	Introducing Hadoop-Why Hadoop?-why not RDBMS?- RDBMS vs Hadoop=Distributed Computing									
Unit - IV	Challenges- History of Hadoop-Overview of Hadoop- Use Case of Hadoop- Hadoop Distribution-									
	HDFS-Processing Data with Hadoop- Managing resources and Applications with Hadoop YARN-									
	Interacting with Hadoop Ecosystem.									
Unit - V	Introduction to MongoDB	Periods	12							
	What is MongoDB? -Why MongoDB-Terms Used in RBDMS and MongoDB- Data Types in MongoDB-									
	MongoDB Query Language.									
	Total Periods	60								

Text Books						
1	Seema Acharya, Subhashini Chellappan, "Big Data and Analytics", Wiley Publication, 2015.					
References						
1	Judith Hurwitz, Alan Nugent, Dr. Fern Halper, Marcia Kaufman, "Big Data for Dummies", John Wiley &					
	Sons, Inc., 2013.					
2	Tom White, "Hadoop: The Definitive Guide", O'Reilly Publications, 2011.					
3	Kyle Banker, "Mongo DB in Action", Manning Publications Company, 2012.					
4	Russell Bradberry, Eric Blow, "Practical Cassandra A developers Approach", Pearson Education, 2014.					
E-References						
1	https://www.webopedia.com/TERM/B/Big_data_analytics.html					
2	https://www.simplilearn.com/data-science-vs-big-data-vs-data-analytics-article					