

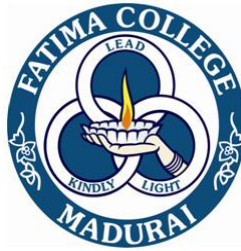


FATIMA COLLEGE

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Mary Land, Madurai - 625018, Tamil Nadu

FATIMA COLLEGE (AUTONOMOUS)



Re-Accredited with “A” Grade by NAAC (3rd Cycle)
74th Rank in India Ranking 2020 (NIRF) by MHRD
Maryland, Madurai- 625 018, Tamil Nadu, India

NAME OF THE DEPARTMENT: INFORMATION TECHNOLOGY

NAME OF THE PROGRAMME : B.Sc.

PROGRAMME CODE : USIT

ACADEMIC YEAR : 2021-22



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FATIMA COLLEGE (AUTONOMOUS), MADURAI-18 DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME CODE : USIT

PART – I – TAMIL / FRENCH / HINDI- 12 CREDITS

PART – I – TAMIL

Offered by The Research Centre of Tamil

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT . MKs
1.	I	19TL1C1	Language-Modern Literature nghJj;jkpo; - ,f;fhy ,yf;fpak;	5	3	40	60	100
2.	II	19TL2C2	Language - Bakthi Literature nghJj;jkpo; - gf;jp ,yf;fpak;	5	3	40	60	100
3.	III	19TL3C3	Language- Epic Literature nghJj;jkpo; - fhg;gpa ,yf;fpak;	5	3	40	60	100
4.	IV	19TL4C4	Language-Sangam Literature nghJj;jkpo; - rq;f ,yf;fpak;	5	3	40	60	100
			Total	20	12			

PART – I –FRENCH

Offered by TheDepartment of French



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S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19RL1C1	PART 1 LANGUAGE FRENCH - LE NIVEAU INTRODUCTIF	5	3	40	60	100
2.	II	19RL2C2	PART 1 LANGUAGE FRENCH - LE NIVEAU DÉCOUVERTE	5	3	40	60	100
3.	III	19RL3C3	PART 1 LANGUAGE FRENCH - NIVEAU INTERMEDIAIRE	5	3	40	60	100
4.	IV	19RL4C4	PART 1 LANGUAGE FRENCH - NIVEAU DE SUIVRE	5	3	40	60	100
			Total	20	12			

PART – I – HINDI

Offered by TheDepartment of Hindi

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19DL1C1	PART 1 LANGUAGE HINDI - VYAKARAN AUR KARYALAYEEN HINDI	5	3	40	60	100
2.	II	19DL2C2	PART 1 LANGUAGE HINDI -SRIJANATMAK HINDI AUR GADHYA	5	3	40	60	100
3.	III	19DL3C3	PART 1 LANGUAGE HINDI - HINDI SAHITHYA KA AADHIKAAL AUR BHAKTHIKAAL	5	3	40	60	100
4.	IV	19DL4C4	PART 1 LANGUAGE HINDI - REETIKALEEN	5	3	40	60	100



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S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
			HINDI SAHITHYA AUR AADHUNIK KAAL					
			Total	20	12			

PART – II -ENGLISH – 12 CREDITS

Offered by The Research Centre of English

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19EL1WB	BASIC COMMUNICATIVE ENGLISH	5	3	40	60	100
2.		19EL1WI	INTERMEDIATE COMMUNICATIVE ENGLISH	5	3	40	60	100
3.		19EL1WA	ADVANCED COMMUNICATIVE ENGLISH	5	3	40	60	100
4.	II	19EL2WB	ENGLISH FOR EFFECTIVE COMMUNICATION (BASIC)	5	3	40	60	100
5.		19EL2WI	ENGLISH FOR EMPOWERMENT (INTERMEDIATE)	5	3	40	60	100
6.		19EL2WA	ENGLISH FOR CREATIVE WRITING (ADVANCED)	5	3	40	60	100



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S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
7.	III	19EL3WN	ENGLISH FOR DIGITAL ERA	5	3	40	60	100
8.	IV	19EL4WN	ENGLISH FOR INTEGRATED DEVELOPMENT	5	3	40	60	100
			Total	20	12			

PART – III -MAJOR, ALLIED & ELECTIVES – 95 CREDITS

MAJOR CORE COURSES INCLUDING PRACTICALS

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	I	21I1CC1	PROGRAMMING IN C	6	4	40	60	100
2.		21I1CC2	LAB I : PROGRAMMING IN C	6	3	40	60	100
3.	II	21I2CC3	DATA STRUCTURES USING C++	6	4	40	60	100
4.		21I2CC4	LAB II: DATA STRUCTURES USING C++	6	3	40	60	100
5.	III	19I3CC5	DATABASE MANAGEMENT SYSTEM	6	4	40	60	100
6.		19I3CC6	LAB III: RDBMS	6	3	40	60	100
7.	IV	19I4CC7	PROGRAMMING IN	6	4	40	60	100



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S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
			JAVA					
8.		19I4CC8	LAB IV:JAVA PROGRAMMING	6	3	40	60	100
9.	V	19I5CC9	.NET PROGRAMMING	5	5	40	60	100
10.		19I5CC10	LAB IN.NET PROGRAMMING	6	3	40	60	100
11.		19I5CC11	SOFTWARE ENGINEERING	5	3	40	60	100
12.		19I5CC12	DATA COMMUNICATION AND NETWORKING	5	5	40	60	100
13.		19I6CC13	PYTHON PROGRAMMING	5	5	40	60	100
14.	VI	19I6CC14	LAB VI : PYTHON PROGRAMMING	6	3	40	60	100
15.		19I6CC15	INFORMATION STORAGE AND MANAGEMENT	5	5	40	60	100
16.		19I6CC16	PROJECT	-	3	40	60	100

ALLIEDCOURSES- 20 CREDITS

S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19G1ACI1	DISCRETE MATHEMATICS	5	5	40	60	100
2.	II	19G2ACI2	OPERATIONS RESEARCH	5	5	40	60	100



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S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
3.	III	19I3AC3	DIGITAL PRINCIPLES AND COMPUTER ARCHITECTURE	5	5	40	60	100
4.	IV	19I4AC4	OPERATING SYSTEMS AND LINUX	5	5	40	60	100

ELECTIVES-

S.No	SE M.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ES E Mks	TOT. Mks
1.	V	19I5ME1/ 19I5ME2	DATA MINING CONCEPTS/ SOFT COMPUTING	5	5	40	60	100
2.	VI	21I6ME3/ 21I6ME4	CLOUD COMPUTING/ MOBILE COMPUTING	5	5	40	60	100
3.		19I6ME5/ 19I6ME6	NETWORK SECURITY/ COMPUTER GRAPHICS	5	5	40	60	100

PART – IV – 20 CREDITS

- VALUE EDUCATION
- ENVIRONMENTAL AWARENESS



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- **NON MAJOR ELECTIVE**
- **SKILL BASED COURSES**

S. No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	I	19G1VE1	Value Education (Including Meditation in Action Movement)	1	1	40	60	100
2.		19I1NME	Image Editing Tool	2	2	40	60	100
3.	II	21G2VE2	Value Education	1	1	40	60	100
4.		19I2NME	Image Editing Tool	2	2	40	60	100
5.	III	19I3EN1	Environmental Education	1	1	40	60	100
6.		19I3SB1	Automation Skills	2	2	40	60	100
7.	IV	19I4EN2	Environmental Education	1	1	40	60	100
8.		19I4SB2	Analytical Skills	2	2	40	60	100
9.	V	19I5SB3	Web Technology	2	2	40	60	100
10.		19I5SB4	PHP	2	2	40	60	100
11.	VI	19I6SB5	3D Animation Software	2	2	40	60	100
12.		19I6SB6	Image Manipulation Tools	2	2	40	60	100

PART - V - 1 CREDIT

OFF-CLASS PROGRAMMES - ALL PART-V

SHIFT - II



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S. No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	TOT. Mks
1.	I - IV	21S4PED	Physical Education	30/ SEM	1	100
2.		21S4YRC	Youth Red Cross			
3.		21S4NSS	NSS			
4.		21S4RTC	Rotaract			
5.		21S4WEC	Women Empowerment Cell			
6.		21S4ACUF	AICUF			

OFF-CLASS PROGRAMME

ADD-ON COURSES

COURSE CODE	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ESE Mks	Total Marks
21UAD2 CA	COMPUTER APPLICATIONS	40	2	I&II	40	60	100
	ONLINE SELF LEARNING COURSE- Foundation Course for Arts	40	3	I	50	-	50
	ONLINE SELF LEARNING COURSE-	40	3	II	50	-	50



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COURSE CODE	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ES E Mks	Total Marks
	Foundation Course for Science						
	ETHICAL STUDIES- Value Education	15	2	III-VI	50 each Semester	-	100
	HUMAN RIGHTS	15	2	V	-	-	100
	OUTREACH PROGRAMME- Reach Out to Society through Action ROSA	100	3	V & VI	-	-	100
	PROJECT	30	4	VI	40	60	100
	READING CULTURE	10/Semester	1	II-VI	-	-	-
	TOTAL		20 +				

EXTRA CREDIT COURSES



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COURSE CODE	COURSE	HR S.	CREDIT S	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA MK S	ESE MK S	TOTAL MARK S
21I1SLK1	SELF LEARNING COURSES for ADVANCED LEARNERS: TRENDS IN INFORMATION TECHNOLOGY	-	2	I	40	60	100
	MOOC COURSES / International Certified online Courses (Department Specific Courses/any other courses) * Students can opt other than the listed course from UGC-SWAYAM UGC / CEC	-	Minimum 2 Credits	I – VI	-	-	

OFF CLASS PROGRAMMES:

19UGVAI1 - Crash Course: Animation Software

21UGVAI2 - Dynamic web site design using HTML 5



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II B.Sc. Information Technology

SEMESTER -IV

For those who joined in 2019 onwards

OLD SYLLABUS

Deletion

15%

PROGRAMM E CODE	COURS E CODE	COURSE TITLE	CATEGOR Y	HRS/WE K	CREDIT S
USIT	19I4CC 7	PROGRAMMIN G IN JAVA	Lecture	6	4

COURSE DESCRIPTION

This course enable the students to build object oriented java programs using the concept of abstraction, encapsulation, exception handling, packages, interfaces, threads and AWT controls. It also imparts the ability to develop projects in java with JDBC connectivity.

COURSE OBJECTIVES

To acquaint the students with various techniques of Java Programming and help them to create effective programs in this language.

UNITS

UNIT -I CLASSES & OBJECTS

(17 HRS.)

Class fundamentals-Declaring objects-Assigning object reference variables-introducing methods-Constructors-this keyword-finalize() method-overloading methods-using object as parameters-Argument passing-returning object-Recursion- Nested & Inner Classes.

Inheritance & Polymorphism: Inheritance-using super-**Method overriding (Self Study).**

UNIT -II PACKAGES , INTERFACE & EXCEPTION HANDLING (17 HRS.)



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Packages – Access Protection- Importing Packages-Interfaces.Exception
:Exception Handling Function-Exception types-**Uncaught exception(Self Study)**-using try & catch.

UNIT –III MULTITHREADING PROGRAMMING(17 HRS.)

Life cycle of thread-Creating & Running Threads-Methods in thread classes.

java. lang PACKAGES: Type wrapper-The number class- the byte, short, integer and Long classes- the float and Double classes-The character class- The Boolean class- the process class- the runtime class- The system class – the object class- the math class- **the string class- string Buffer class (Self Study)**.

APPLET: The Life cycle of Applet- The Applet class- Development and Execution of as simple Applet- Syntax of Applet tag.

UNIT –IV ABSTRACT WINDOW TOOLKIT - I (17 HRS.)

15%

Events-Listeners-Event Handling Methods-Labels-Button Control-Checkbox Control-radio button control-Choice control-List control-Scrollbars-Flow Layout- **Border Layout(Self Study)**.

ABSTRACT WINDOW TOOLKIT - II:Windows& frames-Menus-Dialogs- Mouse Events and their Listener-Adapter Classes- Inner classes-Anonymous Inner classes.

SWING:JApplet class-Icons-JLabel Control-JTextfield Control-JButton Control-JCheckbox Control-JRadioButton Control-Menus-JSlider Control-JComboBoxControl-JgtabbedPane Control-JScrollPane Control-**Tables (Self Study)**.

UNIT –V JAVA DATABASE CONNECTIVITY (17 HRS.)

Establishing a Connection-Creation of Data Tables-Entering Data into the tables _ Table Updating-Use of Prepared Statement- Obtaining Metadata- Using Transaction-Scrollable Result sets-**Stored Procedure (Self Study)**.



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SERVLETS: Servlet and Dynamic Webpages- Life cycle of a servlet- A simple servlet

UNIT –VI DYNAMISM (Evaluation Pattern-CIA only) (5 HRS.)

Latest Trends in Java Technologies (Angular, React)

TEXT BOOK:

1. Schildt, Herbert. "Java: the complete reference." (2017). Chapters: 6, 7, 8, 9, 10, 11
2. Muthu, C. "Programming with JAVA." Vijay Nicole Imprints, Chennai (2004). Chapters: 25, 8, 16, 9, 10, 11, 18, 19

REFERENCES:

1. Horstmann, Cay S., and Gary Cornell. Core Java: Advanced Features. Vol. 2. Pearson Education, 2013.
2. Naughton, Patrick, and Herbert Schildt. "The complete reference java 2." (2003).
3. Arnold, Ken, et al. The Java programming language. Vol. 2. Reading: Addison-wesley, 2000.

WEB REFERNCES :

1. Java Tutorial
<https://www.tutorialspoint.com/java/>
2. Java Tutorial For Beginners: Learn in 7 Days
<https://www.guru99.com/java-tutorial.html>



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II B.Sc. Information Technology

NEW SYLLABUS

SEMESTER -IV

15%

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
USIT	19I4CC7	PROGRAMMING IN JAVA	Lecture	6	4

COURSE DESCRIPTION

This course enable the students to build object oriented java programs using the concept of abstraction, encapsulation, exception handling, packages, interfaces, threads and AWT controls. It also imparts the ability to develop projects in java with JDBC connectivity.

COURSE OBJECTIVES

To acquaint the students with various techniques of Java Programming and help them to create effective programs in this language.

UNITS

UNIT -I CLASSES & OBJECTS

(17 HRS.)

Class fundamentals-Declaring objects-Assigning object reference variables-introducing methods-Constructors-this keyword-finalize() method-overloading methods-using object as parameters-Argument passing-returning object-Recursion- Nested & Inner Classes.

Inheritance & Polymorphism: Inheritance-using super-**Method overriding (Self Study).**

UNIT -II PACKAGES , INTERFACE & EXCEPTION HANDLING (17 HRS.)



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Packages – Access Protection- Importing Packages-Interfaces.Exception
:Exception Handling Function-Exception types-**Uncaught exception(Self Study)**-using try & catch.

UNIT –III MULTITHREADING PROGRAMMING (17 HRS.)

Life cycle of thread-Creating & Running Threads-Methods in thread classes.

java. lang PACKAGES: Type wrapper-The number class- the byte, short, integer and Long classes- the float and Double classes-The character class- The Boolean class- the process class- the runtime class- The system class – the object class- the math class- **the string class- string Buffer class (Self Study)**.

UNIT –IV APLET & SWING : (17 HRS.)

APPLET: The Life cycle of Applet- The Applet class- Development and Execution of as simple Applet- Syntax of Applet tag.

SWING:JApplet class-Icons-JLabel Control-JTextfield Control-JButton Control-JCheckbox Control-JRadioButton Control-Menus-JSlider Control-JComboBoxControl-JgtabbedPane Control-JScrollPane Control-**Tables (Self Study)**.

UNIT –V JAVA DATABASE CONNECTIVITY (17 HRS.)

Establishing a Connection-Creation of Data Tables-Entering Data into the tables _ Table Updating-Use of Prepared Statement- Obtaining Metadata- Using Transaction-Scrollable Result sets-**Stored Procedure (Self Study)**.

SERVLETS: Servlet and Dynamic Webpages- Life cycle of a servlet- A simple servlet

UNIT –VI DYNAMISM (Evaluation Pattern-CIA only) (5 HRS.)

Latest Trends in Java Technologies (Angular, React)

TEXT BOOK:



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4. Horstmann, Cay S., and Gary Cornell. Core Java: Advanced Features. Vol. 2. Pearson Education, 2013.
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4. Java Tutorial For Beginners: Learn in 7 Days
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Digital Open Educational Resources (DOER):

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2. Java Tutorial For Beginners: Learn in 7 Days
<https://www.guru99.com/java-tutorial.html>

COURSE CONTENTS & LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
UNIT – I CLASSES & OBJECTS				
1.1	Class fundamentals, Declaring objects, Assigning object reference variables, introducing methods	5	Chalk & Talk	Black Board
1.2	Constructors, this keyword, finalize() method	4	Chalk & Talk	Black Board
1.3	overloading methods, using object as parameters, Argument passing, returning object, Recursion	4	Lecture	PPT& White board
1.4	Nested & Inner Classes, Inheritance & Polymorphism, Inheritance	3	Lecture	Smart Board
1.5	Method overriding (Self Study)	1	Discussion	Black Board
UNIT – II: PACKAGES, INTERFACE& EXCEPTION HANDLING				
2.1	Packages, Access Protection	4	Chalk & Talk	Black Board
2.2	Importing Packages, Interfaces	5	Chalk & Talk	Black Board
2.3	Exception Handling Function	4	Lecture	PPT& White board
2.4	Exception types, using try & catch	3	Lecture	Smart Board
2.5	Uncaught exception (Self Study)	1	Discussion	Black Board
UNIT – III: MULTITHREADING PROGRAMMING				

3.1	Life cycle of thread, Creating & Running Threads	4	Chalk & Talk	Black Board
3.2	Methods in thread classes, java. Lang, PACKAGES: Type wrapper-The number class	4	Chalk & Talk	Black Board
3.3	The byte, short, integer and Long classes, the float and Double classes	3	Lecture	PPT & White board
3.4	The character class, The Boolean class, the process class, the runtime class	3	Lecture	Smart Board
3.5	The system class, the object class, the math class	2	Lecture	Black Board
3.6	String Buffer class (Self Study)	1	Discussion	Black Board
UNIT – IV : ABSTRACT WINDOW TOOLKIT - I				
4.1	Events, Listeners, Event Handling Methods, Labels, Button Control	4	Chalk & Talk	Black Board
4.2	Checkbox Control, radio button control, Choice control, List control, Scrollbars, Flow Layout	4	Chalk & Talk	Black Board
4.3	Border Layout (Self Study)	1	Discussion	Black Board
4.3	ABSTRACT WINDOW TOOLKIT - II : Windows & frames, Menus, Dialogs, Mouse Events and their Listener	2	Lecture	PPT & White board
4.3	Adapter Classes, Inner classes, Anonymous Inner classes	2	Lecture	Smart Board
4.4	SWING: JApplet class, Icons, JLabelControl, JTextfield Control, JButton Control, JCheckbox	2	Chalk & Talk	Black Board
4.5	Control, JRadioButton Control, Menus, JSlider Control, JComboBoxControl, JgtabbedPane Control, JScrollPane Control	2	Chalk & Talk	Black Board

UNIT – V : JAVA DATABASE CONNECTIVITY				
5.1	JAVA DATABASE CONNECTIVITY: Establishing a Connection, Creation of Data Tables	4	Chalk & Talk	Black Board
5.2	Entering Data into the tables, Table Updating-Use of Prepared Statement	3	Chalk & Talk	Black Board
5.3	Obtaining Metadata, Using Transaction, Scrollable Result sets	3	Lecture	PPT& White board
5.4	Stored Procedure (Self Study)	1	Discussion	Black Board
5.5	SERVLETS: Servlet and Dynamic Web pages, Life cycle of a servlet, A simple servlet	4	Lecture	Smart Board
UNIT –6 DYNAMISM				
6.1	Latest Trends in Java Technologies - Angular	2	Discussion	Black Board
6.2	Latest Trends in Java Technologies - React	3	Discussion	Black Board

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/PP T 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

End Semester - UG

Levels	Section A (i) 5 Mks.	Section A (ii) 5 Mks	Section B 8 Mks.	Section C 12 Mks	Section D 20 Mks.	Section E 10 Mks.	Total 60Mks.	
K1	5	5	-	4	-	-	14	23.33 %
K2	-	-	8	4	-	-	12	20 %
K3	-	-	-	-	20	-	20	33.33 %
K4	-	-	-	4	-	10	14	23.34 %
Total	5	5	8	12	20	10	60	100 %

CIA	
Scholastic	35

Non Scholastic	5
	40

EVALUATION PATTERN

SCHOLASTIC					NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

UG CIA Components

				Nos				
C1	-	Test (CIA 1)	1	-	10	Mks		
C2	-	Test (CIA 2)	1	-	10	Mks		
C3	-	Assignment	1	-	5	Mks		
C4	-	Open Book Test/PPT	2 *	-	5	Mks		
C5	-	Quiz	2 *	-	5	Mks		
C6	-	Attendance		-	5	Mks		

****The best out of two will be taken into account***

COURSE OUTCOMES

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

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Understand the concepts of Object-Oriented Programming & Java Programming Constructs.	K1 & K2	PSO1& PSO2
CO 2	Understand basic concepts of Java such as operators, classes, objects, inheritance, packages, Enumeration and various keywords.	K1 & K2	PSO1, PSO2 & PSO3
CO 3	Understand the concept of exception handling and Input/output operations.	K1 & K2	PSO1& PSO2
CO 4	Design Java & Java applet based applications.	K2 & K3	PSO6
CO 5	Analyze & Design the concept of Event Handling and Abstract Window Toolkit.	K3 & K4	PSO3 & PSO8

Mapping of COs with PSOs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	3	3	2	2	2	1	1	1
CO2	3	3	3	2	2	2	2	1
CO3	3	3	1	2	2	2	2	2
CO4	2	2	2	1	2	3	2	2
CO5	2	2	3	1	1	2	1	3

Mapping of COs with POs

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

Note: ♦ Strongly Correlated – 3
Weakly Correlated -1

♦ Moderately Correlated – 2

♦

COURSE DESIGNER:

1. Staff Name: **V.MAGESHWARI**

Forwarded By



V. Mageshwari

**HOD'S Signature
& Name**

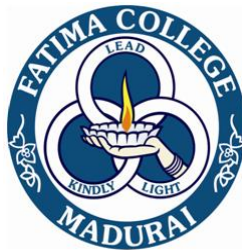


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FATIMA COLLEGE (AUTONOMOUS)



Re-Accredited with “A” Grade by NAAC (3rd Cycle)
74th Rank in India Ranking 2020 (NIRF) by MHRD
Maryland, Madurai- 625 018, Tamil Nadu, India

NAME OF THE DEPARTMENT: INFORMATION TECHNOLOGY

NAME OF THE PROGRAMME : B.Sc.

PROGRAMME CODE : USIT

ACADEMIC YEAR : 2021-22



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FATIMA COLLEGE (AUTONOMOUS), MADURAI-18
DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME CODE : USIT

PART – I – TAMIL / FRENCH / HINDI- 12 CREDITS

PART – I – TAMIL

Offered by The Research Centre of Tamil

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT . MKs
1.	I	19TL1C1	Language-Modern Literature nghJj;jkpo; - ,f;fhy ,yf;fpak;	5	3	40	60	100
2.	II	19TL2C2	Language - Bakthi Literature nghJj;jkpo; - gf;jp ,yf;fpak;	5	3	40	60	100
3.	III	19TL3C3	Language- Epic Literature nghJj;jkpo; - fhg;gpa ,yf;fpak;	5	3	40	60	100
4.	IV	19TL4C4	Language-Sangam Literature nghJj;jkpo; - rq;f ,yf;fpak;	5	3	40	60	100
			Total	20	12			



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PART – I –FRENCH

Offered by TheDepartment of French

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19RL1C1	PART 1 LANGUAGE FRENCH - LE NIVEAU INTRODUCTIF	5	3	40	60	100
2.	II	19RL2C2	PART 1 LANGUAGE FRENCH - LE NIVEAU DÉCOUVERTE	5	3	40	60	100
3.	III	19RL3C3	PART 1 LANGUAGE FRENCH - NIVEAU INTERMEDIAIRE	5	3	40	60	100
4.	IV	19RL4C4	PART 1 LANGUAGE FRENCH - NIVEAU DE SUIVRE	5	3	40	60	100
			Total	20	12			

PART – I – HINDI

Offered by TheDepartment of Hindi

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19DL1C1	PART 1 LANGUAGE HINDI - VYAKARAN AUR KARYALAYEEN HINDI	5	3	40	60	100
2.	II	19DL2C2	PART 1 LANGUAGE HINDI -SRIJANATMAK HINDI AUR GADHYA	5	3	40	60	100
3.	III	19DL3C3	PART 1 LANGUAGE HINDI - HINDI SAHITHYA KA AADHIKAAL AUR	5	3	40	60	100



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S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
			BHAKTHIKAAL					
4.	IV	19DL4C4	PART 1 LANGUAGE HINDI - REETIKALEEN HINDI SAHITHYA AUR AADHUNIK KAAL	5	3	40	60	100
			Total	20	12			

PART - II - ENGLISH - 12 CREDITS

Offered by The Research Centre of English

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19EL1WB	BASIC COMMUNICATIVE ENGLISH	5	3	40	60	100
2.		19EL1WI	INTERMEDIATE COMMUNICATIVE ENGLISH	5	3	40	60	100
3.		19EL1WA	ADVANCED COMMUNICATIVE ENGLISH	5	3	40	60	100
4.	II	19EL2WB	ENGLISH FOR EFFECTIVE COMMUNICATION (BASIC)	5	3	40	60	100
5.		19EL2WI	ENGLISH FOR EMPOWERMENT (INTERMEDIATE)	5	3	40	60	100
6.		19EL2WA	ENGLISH FOR	5	3	40	60	100



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S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
			CREATIVE WRITING (ADVANCED)					
7.	III	19EL3WN	ENGLISH FOR DIGITAL ERA	5	3	40	60	100
8.	IV	19EL4WN	ENGLISH FOR INTEGRATED DEVELOPMENT	5	3	40	60	100
			Total	20	12			

PART – III -MAJOR, ALLIED & ELECTIVES – 95 CREDITS

MAJOR CORE COURSES INCLUDING PRACTICALS

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	I	21I1CC1	PROGRAMMING IN C	6	4	40	60	100
2.		21I1CC2	LAB I : PROGRAMMING IN C	6	3	40	60	100
3.	II	21I2CC3	DATA STRUCTURES USING C++	6	4	40	60	100
4.		21I2CC4	LAB II: DATA STRUCTURES USING C++	6	3	40	60	100
5.	III	19I3CC5	DATABASE MANAGEMENT SYSTEM	6	4	40	60	100



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S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
6.		19I3CC6	LAB III: RDBMS	6	3	40	60	100
7.	IV	19I4CC7	PROGRAMMING IN JAVA	6	4	40	60	100
8.		19I4CC8	LAB IV:JAVA PROGRAMMING	6	3	40	60	100
9.	V	19I5CC9	.NET PROGRAMMING	5	5	40	60	100
10.		19I5CC10	LAB IN.NET PROGRAMMING	6	3	40	60	100
11.		19I5CC11	SOFTWARE ENGINEERING	5	3	40	60	100
12.		19I5CC12	DATA COMMUNICATION AND NETWORKING	5	5	40	60	100
13.	VI	19I6CC13	PYTHON PROGRAMMING	5	5	40	60	100
14.		19I6CC14	LAB VI : PYTHON PROGRAMMING	6	3	40	60	100
15.		19I6CC15	INFORMATION STORAGE AND MANAGEMENT	5	5	40	60	100
16.		19I6CC16	PROJECT	-	3	40	60	100

ALLIEDCOURSES- 20 CREDITS

S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19G1ACI1	DISCRETE	5	5	40	60	100



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S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
			MATHEMATICS					
2.	II	19G2ACI2	OPERATIONS RESEARCH	5	5	40	60	100
3.	III	19I3AC3	DIGITAL PRINCIPLES AND COMPUTER ARCHITECTURE	5	5	40	60	100
4.	IV	19I4AC4	OPERATING SYSTEMS AND LINUX	5	5	40	60	100

ELECTIVES-

S.No	SE M.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ES E Mks	TOT. Mks
1.	V	19I5ME1/ 19I5ME2	DATA MINING CONCEPTS/ SOFT COMPUTING	5	5	40	60	100
2.	VI	19I6ME3/ 19I6ME4	CLOUD COMPUTING/ MOBILE COMPUTING	5	5	40	60	100
3.		19I6ME5/ 19I6ME6	NETWORK SECURITY/ COMPUTER GRAPHICS	5	5	40	60	100



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PART – IV – 20 CREDITS

- **VALUE EDUCATION**
- **ENVIRONMENTAL AWARENESS**
- **NON MAJOR ELECTIVE**
- **SKILL BASED COURSES**

S. No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	I	19G1VE1	Value Education (Including Meditation in Action Movement)	1	1	40	60	100
2.		19I1NME	Image Editing Tool	2	2	40	60	100
3.	II	21G2VE2	Value Education	1	1	40	60	100
4.		19I2NME	Image Editing Tool	2	2	40	60	100
5.	III	19I3EN1	Environmental Education	1	1	40	60	100
6.		19I3SB1	Automation Skills	2	2	40	60	100
7.	IV	19I4EN2	Environmental Education	1	1	40	60	100
8.		19I4SB2	Analytical Skills	2	2	40	60	100
9.	V	19I5SB3	Web Technology	2	2	40	60	100
10.		19I5SB4	PHP	2	2	40	60	100
11.	VI	19I6SB5	3D Animation Software	2	2	40	60	100
12.		19I6SB6	Image Manipulation Tools	2	2	40	60	100



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PART - V - 1 CREDIT

OFF-CLASS PROGRAMMES - ALL PART-V

SHIFT - II

S. No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	TOT. Mks
1.	I - IV	21S4PED	Physical Education	30/ SEM	1	100
2.		21S4YRC	Youth Red Cross			
3.		21S4NSS	NSS			
4.		21S4RTC	Rotaract			
5.		21S4WEC	Women Empowerment Cell			
6.		21S4ACUF	AICUF			

OFF-CLASS PROGRAMME

ADD-ON COURSES

COURSE CODE	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ESE Mks	Total Marks
21UAD2 CA	COMPUTER APPLICATIONS	40	2	I&II	40	60	100
	ONLINE SELF LEARNING COURSE- Foundation Course for Arts	40	3	I	50	-	50



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COURSE CODE	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ES E Mks	Total Marks
	ONLINE SELF LEARNING COURSE- Foundation Course for Science	40	3	II	50	-	50
	ETHICAL STUDIES- Value Education	15	2	III-VI	50 each Semester	-	100
	HUMAN RIGHTS	15	2	V	-	-	100
	OUTREACH PROGRAMME- Reach Out to Society through Action ROSA	100	3	V & VI	-	-	100
	PROJECT	30	4	VI	40	60	100
	READING CULTURE	10/Semester	1	II-VI	-	-	-
	TOTAL		20 +				



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EXTRA CREDIT COURSES

COURSE CODE	COURSE	HR S.	CREDIT S	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA MK S	ESE MK S	TOTAL MARKS
21I1SLK1	SELF LEARNING COURSES for ADVANCED LEARNERS: TRENDS IN INFORMATION TECHNOLOGY	-	2	I	40	60	100
	MOOC COURSES / International Certified online Courses (Department Specific Courses/any other courses) * Students can opt other than the listed course from UGC-SWAYAM UGC / CEC	-	Minimum 2 Credits	I – VI	-	-	

OFF CLASS PROGRAMMES:

19UGVAI1 - Crash Course: Animation Software

21UGVAI2 - Dynamic web site design using HTML 5



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III B.Sc. Information Technology

OLD SYLLABUS

SEMESTER – VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
USIT	19I6ME3	CLOUD COMPUTING	Lecture	5	5

COURSE DESCRIPTION

This course facilitates the students to understand, analyze the various applications of cloud tool and also provide solutions for cloud security and storage.

COURSE OBJECTIVES

To impart the knowledge about the Computations done in cloud, its architecture and to build their own cloud.

UNITS

UNIT –I UNDERSTANDING CLOUD COMPUTING (14 HRS.)

Origin and Influence- Basic concepts and terminology-goals and benefits-Risks and challenges. FUNDAMENTAL CONCEPTS AND MODELS: **Roles and Boundaries-Cloud Characteristics-Cloud Delivery Models (Self Study).**

UNIT –II CLOUD ENABLING TECHNOLOGY (14 HRS.)

Broad band Network and Internet Architecture-Data center Technology-Virtualization Technology-Web Technology-Multitenant Technology-**Service Technology (Self Study).**



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UNIT –III FUNDAMENTAL CLOUD SECURITY

(14 HRS.)

Basic terms and Concepts-Threat Agents-Cloud Security Threats.**Cloud Infrastructure Mechanism:** Virtual server-cloud storage devices-cloud usage monitor-Resource replication-**readymade Environment(Self Study).**

UNIT –IV SPECIALIZED CLOUD MECHANISMS

(14 HRS.)

Automated Scaling Listener-Load balancer-SLA monitor-Pay-per-use monitor-Audit monitor. Fail over system-Hypervisor-Resource cluster-**Multi Device Broker-state management database (Self Study).**Cloud security mechanism:Encryption-Hashing-Digital signature-Public key Infrastructure.

UNIT –V CLOUD COMPUTING ARCHITECTURE

(14 HRS.)

Identity and access management-single sign on-Cloud Based security groups-Hardened Virtual Server Images. Fundamental cloud architecture:Workload Distribution Architecture-Resource Pooling Architecture-**Cloud Bursting Architecture-Redundant Storage Architecture (Self Study).**

UNIT –VI DYNAMISM (Evaluation Pattern-CIA only)

(5 HRS.)

Emerging Cloud Computing Trends (Server less Computing, Omni-Cloud, Quantum Computing).

TEXT BOOK:

1. Erl, Thomas, Ricardo Puttini, and ZaighamMahmood. Cloud computing: concepts, technology & architecture. Pearson Education, 2013. CHAPTER 3.1-3.4, 4.1-4.4, 5.1-5.6, 6.1-6.3, 7.2-7.6, 8.1-8.10,10.1-10.4, 10.5-10.8, 11.1, 11.2, 11.6, 11.8.

REFERENCES:

1. Buyya, Rajkumar, James Broberg, and Andrzej M. Goscinski, eds. Cloud computing: Principles and paradigms. Vol. 87. John Wiley & Sons, 2010.



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2. Rhoton, John. "Cloud Computing Explained: Implementation Handbook for Enterprises. 2009." Recursive Limited.
 3. Linthicum, David S. Cloud computing and SOA convergence in your enterprise: a step-by-step guide. Pearson Education, 2009.

WEB REFERNCES :

1. Learn Cloud Computing Tutorial - Javatpoint
<https://www.javatpoint.com/cloud-computing-tutorial>
2. Cloud Computing Tutorial For Beginners
<https://www.guru99.com/cloud-computing-for-beginners.html>



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III B.Sc. Information Technology

SEMESTER –I

For those who joined in 2021 onwards

NEW SYLLABUS

20%

PROGRAM ME CODE	COURSE CODE	COURSE TITLE	CATEGOR Y	HRS/WE K	CREDIT S
USIT	21I6ME3	CLOUD COMPUTING	Lecture	5	5

COURSE DESCRIPTION

This course facilitates the students to understand, analyze the various applications of cloud tool and also provide solutions for cloud security and storage.

COURSE OBJECTIVES

To impart the knowledge about the Computations done in cloud, its architecture and to build their own cloud.

UNITS

UNIT –I UNDERSTANDING CLOUD COMPUTING (14 HRS.)

Origin and Influence- Basic concepts and terminology-goals and benefits-Risks and challenges. FUNDAMENTAL CONCEPTS AND MODELS: **Roles and Boundaries-Cloud Characteristics-Cloud Delivery Models (Self Study).**

UNIT –II CLOUD ENABLING TECHNOLOGY (14 HRS.)

Broad band Network and Internet Architecture-Data center Technology-Virtualization Technology-Web Technology-Multitenant Technology-**Service Technology (Self Study).**



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UNIT –III FUNDAMENTAL CLOUD SECURITY

(14 HRS.)

Basic terms and Concepts-Threat Agents-Cloud Security Threats.**Cloud Infrastructure Mechanism:** Virtual server-cloud storage devices-cloud usage monitor-Resource replication-**readymade Environment(Self Study).**

UNIT –IV SPECIALIZED CLOUD MECHANISMS

(14 HRS.)

Automated Scaling Listener-Load balancer-SLA monitor-Pay-per-use monitor-Audit monitor. Hypervisor-**Multi Device Broker-state management database (Self Study)**-Remote Administration System-Resource Management System-SLA Management System-Billing Management System.

UNIT –V CLOUD COMPUTING ARCHITECTURE

(14 HRS.)

20%

Workload Distribution Architecture-Resource Pooling Architecture-Cloud Bursting Architecture-Redundant Storage Architecture. **ADVANCED CLOUD ARCHITECTURES** :Hypervisor clustering architecture-Load balanced virtual server instances architecture-Zero downtime architecture- cloud balancing architecture.

UNIT –VI DYNAMISM (Evaluation Pattern-CIA only)

(14HRS.)

Virtual server-cloud storage devices.

TEXT BOOK:

2. Erl, Thomas, Ricardo Puttini, and ZaighamMahmood.CLOUD COMPUTING: CONCEPTS, TECHNOLOGY &ARCHITECTURE.Pearson Education, 2013.CHAPTER 3.1-3.4, 4.1-4.4, 5.1-5.6, 6.1-6.3, 7.2-7.6, 8.1-8.10,9.1-9.4,10.1-10.4, 10.5-10.8, 11.1, 11.2, 11.6, 11.8.

REFERENCES:

4. Buyya, Rajkumar, James Broberg, and Andrzej M. Goscinski, eds. Cloud computing: Principles and paradigms. Vol. 87.John Wiley & Sons, 2010.
5. Rhoton, John. "Cloud Computing Explained: Implementation Handbook for Enterprises. 2009." Recursive Limited.



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-
6. Linthicum, David S. Cloud computing and SOA convergence in your enterprise: a step-by-step guide. Pearson Education, 2009.

Digital Open Educational Resources (DOER):

3. Learn Cloud Computing Tutorial - Java point

<https://www.javatpoint.com/cloud-computing-tutorial>

4. Cloud Computing Tutorial For Beginners

<https://www.guru99.com/cloud-computing-for-beginners.html>

<https://www.javatpoint.com/cloud-computing-tutorial>

2. Cloud Computing Tutorial For Beginners

<https://www.guru99.com/cloud-computing-for-beginners.html>

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
UNIT – I UNDERSTANDINGCLOUDCOMPUTING				
1.1	Origin and Influence	4	Chalk & Talk	Black Board
1.2	Basic concepts and terminology, goals and benefits	4	Chalk & Talk	Black Board
1.3	Risks and challenges	4	Lecture	PPT& White board
1.4	Roles and Boundaries-Cloud Characteristics-Cloud Delivery Models (Self Study).	2	Discussion	Black Board
UNIT – IICLOUDENABLINGTECHNOLOGY				
2.1	Broad band Network and Internet Architecture	3	Chalk & Talk	Black Board
2.2	Data center Technology	3	Chalk & Talk	Black Board
2.3	Virtualization Technology, Web Technology	4	Lecture	PPT& White board
2.4	Multitenant Technology	2	Lecture	Smart Board
2.5	Service Technology (Self Study)	2	Discussion	Black Board
UNIT – III FUNDAMENTALCLOUDSECURITY				
3.1	Basic terms and Concepts, Threat Agents	3	Chalk & Talk	Black Board
3.2	Cloud Security Threats	3	Chalk & Talk	Black Board
3.3	Cloud InfrastructureMechanism:Virtual server	2	Lecture	PPT& White board
3.4	cloud storage devices, cloud usage monitor	2	Lecture	Smart Board
3.5	Resource replication	2	Chalk &	Black

			Talk	Board
3.6	Readymade Environment (Self Study)	2	Discussion	Black Board
UNIT – IV SPECIALIZED CLOUD MECHANISMS				
4.1	Automated Scaling Listener, Load balancer	2	Chalk & Talk	Black Board
4.2	SLA monitor, Pay-per-use monitor, Audit monitor	3	Chalk & Talk	Black Board
4.3	Fail over system, Hypervisor, Resource cluster	3	Chalk & Talk	Black Board
4.3	Remote Administration System-Resource Management System-	3	Chalk & Talk	Black Board
4.4	SLA Management System-Billing Management System.	3	Chalk & Talk	Black Board
UNIT – V CLOUD COMPUTING ARCHITECTURE				
5.1	Identity and access management	3	Chalk & Talk	Black Board
5.2	single sign on, Cloud Based security groups	3	Chalk & Talk	Black Board
5.3	Hardened Virtual Server Images	2	Lecture	PPT & White board
5.4	Fundamental cloud architecture	2	Lecture	Smart Board
5.5	ADVANCED CLOUD ARCHITECTURES: Hypervisor clustering architecture	2	Discussion	Black Board
5.6	-Load balanced virtual server instances architecture-Zero downtime architecture- cloud balancing architecture.	2	Discussion	Black Board
UNIT –6 DYNAMISM				
6.1	Virtual server-cloud storage devices	5	Discussion	Black Board

INTERNAL - UG

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks.	OBT/PP T 5 Mks.	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

End Semester - UG

Levels	Section A (i) 5 Mks.	Section A (ii) 5 Mks.	Section B 8 Mks.	Section C 12 Mks.	Section D 20 Mks.	Section E 10 Mks.	Total 60Mks.	
K1	5	5	-	4	-	-	14	23.33 %
K2	-	-	8	4	-	-	12	20 %
K3	-	-	-	-	20	-	20	33.33 %
K4	-	-	-	4	-	10	14	23.34 %
Total	5	5	8	12	20	10	60	100 %

CIA	
Scholastic	35
Non Scholastic	5
	40

EVALUATION PATTERN

SCHOLASTIC					NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

UG CIA Components

				Nos				
C1	-	Test (CIA 1)	1	-	10	Mks		
C2	-	Test (CIA 2)	1	-	10	Mks		
C3	-	Assignment	1	-	5	Mks		
C4	-	Open Book Test/PPT	2 *	-	5	Mks		
C5	-	Quiz	2 *	-	5	Mks		
C6	-	Attendance		-	5	Mks		

****The best out of two will be taken into account***

COURSE OUTCOMES

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

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Understand fundamental concepts of cloud service and deployment models.	K1& K2	PSO1& PSO2
CO 2	Identify the importance of virtualization along with their technologies.	K1& K2	PSO3
CO 3	Analyze different cloud computing Services.	K3 & K4	PSO6
CO 4	Analyze the components and the security in cloud.	K3 & K4	PSO6
CO 5	Illustrate different design & develop backup strategies for cloud data based on features.	K3 & K4	PSO6, PSO7 & PSO8

Mapping of COs with PSOs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	3	3	2	2	2	1	1	1
CO2	1	1	3	2	2	2	2	1
CO3	1	2	1	1	2	3	2	2
CO4	2	2	1	2	2	3	2	2
CO5	1	2	1	1	1	3	3	3

Mapping of COs with POs

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

Note: ♦ Strongly Correlated – 3
WeaklyCorrelated -1

♦ ModeratelyCorrelated – 2

♦

COURSE DESIGNER:

1. Staff Name: MRS. T. LEENA PREMA KUMARI

Forwarded By



V. Mageshwari

**HOD'S Signature
& Name**

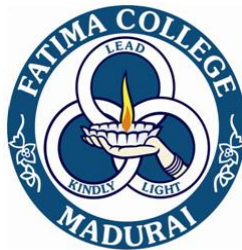


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FATIMA COLLEGE (AUTONOMOUS)



Re-Accredited with “A” Grade by NAAC (3rd Cycle)
74th Rank in India Ranking 2020 (NIRF) by MHRD
Maryland, Madurai- 625 018, Tamil Nadu, India

NAME OF THE DEPARTMENT: INFORMATION TECHNOLOGY

NAME OF THE PROGRAMME : B.Sc.

PROGRAMME CODE : USIT

ACADEMIC YEAR : 2021-22



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FATIMA COLLEGE (AUTONOMOUS), MADURAI-18
DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME CODE : USIT

PART – I – TAMIL / FRENCH / HINDI- 12 CREDITS

PART – I – TAMIL

Offered by The Research Centre of Tamil

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT . MKs
1.	I	19TL1C1	Language-Modern Literature nghJj;jkpo; - ,f;fhy ,yf;fpak;	5	3	40	60	100
2.	II	19TL2C2	Language - Bakthi Literature nghJj;jkpo; - gf;jp ,yf;fpak;	5	3	40	60	100
3.	III	19TL3C3	Language- Epic Literature nghJj;jkpo; - fhg;gpa ,yf;fpak;	5	3	40	60	100
4.	IV	19TL4C4	Language-Sangam Literature nghJj;jkpo; - rq;f ,yf;fpak;	5	3	40	60	100
			Total	20	12			



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PART – I –FRENCH

Offered by TheDepartment of French

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19RL1C1	PART 1 LANGUAGE FRENCH - LE NIVEAU INTRODUCTIF	5	3	40	60	100
2.	II	19RL2C2	PART 1 LANGUAGE FRENCH - LE NIVEAU DÉCOUVERTE	5	3	40	60	100
3.	III	19RL3C3	PART 1 LANGUAGE FRENCH - NIVEAU INTERMEDIAIRE	5	3	40	60	100
4.	IV	19RL4C4	PART 1 LANGUAGE FRENCH - NIVEAU DE SUIVRE	5	3	40	60	100
			Total	20	12			

PART – I – HINDI

Offered by TheDepartment of Hindi

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19DL1C1	PART 1 LANGUAGE HINDI - VYAKARAN AUR KARYALAYEEN HINDI	5	3	40	60	100
2.	II	19DL2C2	PART 1 LANGUAGE HINDI -SRIJANATMAK HINDI AUR GADHYA	5	3	40	60	100
3.	III	19DL3C3	PART 1 LANGUAGE HINDI - HINDI SAHITHYA KA AADHIKAAL AUR	5	3	40	60	100



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S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
			BHAKTHIKAAL					
4.	IV	19DL4C4	PART 1 LANGUAGE HINDI - REETIKALEEN HINDI SAHITHYA AUR AADHUNIK KAAL	5	3	40	60	100
			Total	20	12			

PART - II - ENGLISH - 12 CREDITS

Offered by The Research Centre of English

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19EL1WB	BASIC COMMUNICATIVE ENGLISH	5	3	40	60	100
2.		19EL1WI	INTERMEDIATE COMMUNICATIVE ENGLISH	5	3	40	60	100
3.		19EL1WA	ADVANCED COMMUNICATIVE ENGLISH	5	3	40	60	100
4.	II	19EL2WB	ENGLISH FOR EFFECTIVE COMMUNICATION (BASIC)	5	3	40	60	100
5.		19EL2WI	ENGLISH FOR EMPOWERMENT (INTERMEDIATE)	5	3	40	60	100
6.		19EL2WA	ENGLISH FOR	5	3	40	60	100



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S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
			CREATIVE WRITING (ADVANCED)					
7.	III	19EL3WN	ENGLISH FOR DIGITAL ERA	5	3	40	60	100
8.	IV	19EL4WN	ENGLISH FOR INTEGRATED DEVELOPMENT	5	3	40	60	100
			Total	20	12			

PART – III -MAJOR, ALLIED & ELECTIVES – 95 CREDITS

MAJOR CORE COURSES INCLUDING PRACTICALS

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	I	21I1CC1	PROGRAMMING IN C	6	4	40	60	100
2.		21I1CC2	LAB I : PROGRAMMING IN C	6	3	40	60	100
3.	II	21I2CC3	DATA STRUCTURES USING C++	6	4	40	60	100
4.		21I2CC4	LAB II: DATA STRUCTURES USING C++	6	3	40	60	100
5.	III	19I3CC5	DATABASE MANAGEMENT SYSTEM	6	4	40	60	100



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S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
6.		19I3CC6	LAB III: RDBMS	6	3	40	60	100
7.	IV	19I4CC7	PROGRAMMING IN JAVA	6	4	40	60	100
8.		19I4CC8	LAB IV:JAVA PROGRAMMING	6	3	40	60	100
9.	V	19I5CC9	.NET PROGRAMMING	5	5	40	60	100
10.		19I5CC10	LAB IN.NET PROGRAMMING	6	3	40	60	100
11.		19I5CC11	SOFTWARE ENGINEERING	5	3	40	60	100
12.		19I5CC12	DATA COMMUNICATION AND NETWORKING	5	5	40	60	100
13.	VI	19I6CC13	PYTHON PROGRAMMING	5	5	40	60	100
14.		19I6CC14	LAB VI : PYTHON PROGRAMMING	6	3	40	60	100
15.		19I6CC15	INFORMATION STORAGE AND MANAGEMENT	5	5	40	60	100
16.		19I6CC16	PROJECT	-	3	40	60	100

ALLIEDCOURSES- 20 CREDITS

S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19G1ACI1	DISCRETE	5	5	40	60	100



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S.NO	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
			MATHEMATICS					
2.	II	19G2ACI2	OPERATIONS RESEARCH	5	5	40	60	100
3.	III	19I3AC3	DIGITAL PRINCIPLES AND COMPUTER ARCHITECTURE	5	5	40	60	100
4.	IV	19I4AC4	OPERATING SYSTEMS AND LINUX	5	5	40	60	100

ELECTIVES-

S.No	SE M.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ES E Mks	TOT. Mks
1.	V	19I5ME1/ 19I5ME2	DATA MINING CONCEPTS/ SOFT COMPUTING	5	5	40	60	100
2.	VI	19I6ME3/ 19I6ME4	CLOUD COMPUTING/ MOBILE COMPUTING	5	5	40	60	100
3.		19I6ME5/ 19I6ME6	NETWORK SECURITY/ COMPUTER GRAPHICS	5	5	40	60	100



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PART – IV – 20 CREDITS

- VALUE EDUCATION
- ENVIRONMENTAL AWARENESS
- NON MAJOR ELECTIVE
- SKILL BASED COURSES

S. No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	I	19G1VE1	Value Education (Including Meditation in Action Movement)	1	1	40	60	100
2.		19I1NME	Image Editing Tool	2	2	40	60	100
3.	II	21G2VE2	Value Education	1	1	40	60	100
4.		19I2NME	Image Editing Tool	2	2	40	60	100
5.	III	19I3EN1	Environmental Education	1	1	40	60	100
6.		19I3SB1	Automation Skills	2	2	40	60	100
7.	IV	19I4EN2	Environmental Education	1	1	40	60	100
8.		19I4SB2	Analytical Skills	2	2	40	60	100
9.	V	19I5SB3	Web Technology	2	2	40	60	100
10.		19I5SB4	PHP	2	2	40	60	100
11.	VI	19I6SB5	3D Animation Software	2	2	40	60	100
12.		19I6SB6	Image Manipulation Tools	2	2	40	60	100



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PART - V - 1 CREDIT

OFF-CLASS PROGRAMMES - ALL PART-V

SHIFT - II

S. No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	TOT. Mks
1.	I - IV	21S4PED	Physical Education	30/ SEM	1	100
2.		21S4YRC	Youth Red Cross			
3.		21S4NSS	NSS			
4.		21S4RTC	Rotaract			
5.		21S4WEC	Women Empowerment Cell			
6.		21S4ACUF	AICUF			

OFF-CLASS PROGRAMME

ADD-ON COURSES

COURSE CODE	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ES E Mks	Total Marks
21UAD2 CA	COMPUTER APPLICATIONS	40	2	I&II	40	60	100
	ONLINE SELF LEARNING COURSE- Foundation Course for Arts	40	3	I	50	-	50



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COURSE CODE	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ES E Mks	Total Marks
	ONLINE SELF LEARNING COURSE- Foundation Course for Science	40	3	II	50	-	50
	ETHICAL STUDIES- Value Education	15	2	III-VI	50 each Semester	-	100
	HUMAN RIGHTS	15	2	V	-	-	100
	OUTREACH PROGRAMME- Reach Out to Society through Action ROSA	100	3	V & VI	-	-	100
	PROJECT	30	4	VI	40	60	100
	READING CULTURE	10/Semester	1	II-VI	-	-	-
	TOTAL		20 +				



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EXTRA CREDIT COURSES

COURSE CODE	COURSE	HR S.	CREDIT S	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA MK S	ESE MK S	TOTAL MARKS
21I1SLK1	SELF LEARNING COURSES for ADVANCED LEARNERS: TRENDS IN INFORMATION TECHNOLOGY	-	2	I	40	60	100
	MOOC COURSES / International Certified online Courses (Department Specific Courses/any other courses) * Students can opt other than the listed course from UGC-SWAYAM UGC / CEC	-	Minimum 2 Credits	I – VI	-	-	

OFF CLASS PROGRAMMES:

19UGVAI1 - Crash Course: Animation Software

21UGVAI2 - Dynamic web site design using HTML 5



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OLD SYLLABUS

III B.Sc. Information Technology SEMESTER – VI For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
USIT	19I6ME4	MOBILE COMPUTING	Lecture	5	5

COURSE DESCRIPTION

This course gives the ability to acquire the knowledge about the technologies in mobile computing and its security issues.

COURSE OBJECTIVES

To obtain knowledge on Mobile Computing Concepts and emerging technologies and applications.

UNITS

UNIT –I INTRODUCTION (14 HRS.)

Mobile Computing – Dialogue Control – Networks – Middleware & Gateways – MOBILE COMPUTING ARCHITECTURE: History of computers and Internet – Architecture for mobile computing – **Three-tier architecture (Self Study).**

UNIT –II MOBILE COMPUTING THROUGH TELEPHONY (14 HRS.)

Evaluation of telephony – Multiple access procedures – Satellite Communication Systems. – EMERGING TECHNOLOGIES: Introduction – **Blue Tooth(Self Study)** – RFID – WiMAX – Mobile IP

UNIT –III GSM (14 HRS.)

Global System for mobile communications – GSM Architecture – GSM Entities – Call routing in GSM – PLMN Interfaces – GSM Addresses and



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Identifiers – Network Aspects in GSM – SMS: Mobile Computing over SMS – Short Message Service – **Value Added Service through SMS(Self Study).**

UNIT –IV GPRS (14 HRS.)

GPRS and packet data network – GPRS network architecture – GPRS network operations – Data services in GPRS – Application for GPRS- **Limitations(Self Study).**

UNIT –V CDMAAND 3G (14 HRS.)

Spread spectrum technology – CDMA vs. GSM – **Wireless Data(Self Study)** – Third generation networks – Applications on 3G. SECURITY ISSUES IN MOBLIE COMUTING: Information Security – Security Techniques & Algorithms.

UNIT –VI DYNAMISM (Evaluation Pattern-CIA only) (5 HRS.)

Recent Trends in Mobile Computing (Business Intelligence (BI) Mobile Apps, IoT, Non-Removable Battery and Memory).

TEXT BOOK:

1. Talukdar, Asoke K. Mobile Computing, 2E. Tata McGraw-Hill Education, 2010. Chapter 1.1 - 1.6, 2.1, 2.2 - 2.5, 3.1 - 3.3, 4.1 - 4.5, 5.1 - 5.5, 5.7, 6.1 - 6.3, 7.1 - 7.7, 9.1, 9.2, 9.4 - 9.7, 20.1 - 20.3.

REFERENCES:

1. Stüber, Gordon L., and Gordon L. Stèuber. Principles of mobile communication. Vol. 2. Norwell, Mass, USA: Kluwer Academic, 1996.
2. Schiller, Jochen H. Mobile communications. Pearson education, 2003.

WEB REFERNCES :

1. Mobile Communication Tutorial - Javatpoint
<https://www.javatpoint.com/mobile-communication-tutorial>



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NEW SYLLABUS

III B.Sc. Information Technology

SEMESTER –VI

20%

For those who joined in 2019 onwards

PROGRAMM E CODE	COURSE CODE	COURSE TITLE	CATEGOR Y	HRS/WE K	CREDIT S
USIT	19I6ME 4	MOBILE COMPUTING	Lecture	5	5

COURSE DESCRIPTION

This course gives the ability to acquire the knowledge about the technologies in mobile computing and its security issues.

COURSE OBJECTIVES

To obtain knowledge on Mobile Computing Concepts and emerging technologies and applications.

UNITS

UNIT –I INTRODUCTION

(14HRS.)

Mobile Computing – Dialogue Control – Networks – Middleware & Gateways –
MOBILE COMPUTING ARCHITECTURE: History of computers and Internet –
Architecture for mobile computing – **Three-tier architecture (Self Study).**

UNIT –II MOBILE COMPUTING THROUGH TELEPHONY

(14 HRS.)

Evaluation of telephony – Multiple access procedures – Satellite
Communication Systems. – EMERGING TECHNOLOGIES: Introduction –
Blue Tooth(Self Study) – RFID – WiMAX – Mobile IP



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UNIT –III GSM & GPRS

(14 HRS.)

Global System for mobile communications – GSM Architecture – GSM Entities – Call routing in GSM – PLMN Interfaces – GSM Addresses and Identifiers – Network Aspects in GSM – GPRS and packet data network – GPRS network architecture – GPRS network operations – Data services in GPRS – Application for GPRS- **Limitations(Self Study).**

UNIT –IV WIRELESS APPLICATION PROTOCOL & WIRELESS LAN (14 HRS.)

20%

Introduction –WAP – MMS- GPRS Application –Wireless LAN: Introduction - Wireless LAN Advantages – IEEE 802.11 Standards – Wireless LAN Architecture –Mobility in Wireless LAN-Deploying Wireless LAN –Mobile Adhoc Networks and Sensor networks **(Self Study).**

UNIT –V CDMA AND SECURITY

(14 HRS.)

Spread spectrum technology – CDMA vs. GSM – **Wireless Data(Self Study)** – Third generation networks – Applications on 3G. SECURITY ISSUES IN MOBILE COMPUTING: Information Security – Security Techniques & Algorithms.

UNIT –VI DYNAMISM (Evaluation Pattern-CIA only)

(5 HRS.)

Recent Trends in Mobile Computing (Business Intelligence (BI) Mobile Apps, IoT, Non-Removable Battery and Memory).

TEXT BOOK:

2. Talukdar, Asoke K. Mobile Computing, 2E.Tata McGraw-Hill Education, 2010.Chapter 1.1 - 1.6, 2.1, 2.2 - 2.5, 3.1 - 3.3, 4.1 - 4.5, 5.1 - 5.5, 5.7, 7.1 - 7.7, 8.1-8.4,9.1, 9.2, 9.4 - 9.7, 10.1-10.7,20.1 - 20.3.



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REFERENCES:

3. Stüber, Gordon L., and Gordon L. Stüber. Principles of mobile communication. Vol. 2. Norwell, Mass, USA: Kluwer Academic, 1996.
4. Schiller, Jochen H. Mobile communications. Pearson education, 2003.

Digital Open Educational Resources (DOER):

2. Mobile Communication Tutorial - Javatpoint

<https://www.javatpoint.com/mobile-communication-tutorial>

1. Mobile Communication Tutorial - Javatpoint

<https://www.javatpoint.com/mobile-communication-tutorial>

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
UNIT -1 INTRODUCTION				
1.1	Mobile Computing, Dialogue Control	3	Chalk & Talk	Black Board
1.2	Networks, Middleware & Gateways	3	Lecture	PPT& White board
1.3	MOBILE COMPUTING ARCHITECTURE: History of computers and Internet	3	Lecture	Black Board
1.4	Architecture for mobile computing	3	Chalk & Talk	Black Board
1.5	Three-tier architecture (Self Study)	2	Discussion	Black Board
UNIT -2MOBILE COMPUTING THROUGH TELEPHONY				
2.1	Evaluation of telephony	2	Chalk & Talk	Black Board
2.2	Multiple access procedures	3	Chalk & Talk	Black Board
2.3	Satellite Communication Systems	3	Lecture	PPT& White board
2.4	EMERGING TECHNOLOGIES, RFID	2	Lecture	Smart Board
2.5	Blue Tooth (Self Study)	2	Discussion	Google classroom
2.6	WiMAX, Mobile IP	2	Lecture	PPT& White board
UNIT -3 GSM& GPRS				
3.1	Global System for mobile, communications	2	Chalk & Talk	Black Board
3.2	GSM Architecture, GSM Entities	3	Chalk & Talk	Black Board
3.3	Call routing in GSM, PLMN Interfaces	3	Lecture	PPT& White board

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
3.4	GSM Addresses and Identifiers, Network Aspects in GSM	3	Lecture	Smart Board
3.5	GPRS and packet data network GPRS network architecture	1	Chalk & Talk	Black Board
3.6	GPRS network operations ,Data services in GPRS	2	Discussion	Google classroom
UNIT -4 WIRELESS APPLICATION PROTOCOL & WIRELESS LAN				
4.1	Introduction –WAP –IEEE 802.11 Standards	3	Chalk & Talk	Black Board
4.2	MMS- GPRS Application	3	Chalk & Talk	Black Board
4.3	Wireless LAN: Introduction - Wireless LAN Advantages	3	Lecture	PPT& White board
4.4	Wireless LAN Architecture	2	Lecture	Smart Board
4.5	Mobility in Wireless LAN-Deploying Wireless LAN	2	Discussion	Black Board
4.6	Mobile Adhoc Networks and Sensor networks	1	Discussion	Google classroom
UNIT -5CDMA and SECURITY				
5.1	Spread spectrum technology – CDMA vs. GSM	3	Chalk &Talk	Black Board
5.2	Wireless Data (Self Study) – Third generation networks	2	Chalk & Talk	Black Board
5.3	Applications on 3G	1	Discussion	Google classroom
5.4	Security Issues In Moblie Computing: Information Security	2	Lecture	Smart Board
5.5	Security Techniques & Algorithms.	3	Discussion	Black Board
UNIT –6 DYNAMISM				
6.1	Business Intelligence (BI) Mobile Apps	2	Discussion	Black Board
6.2	IoT, Non-Removable Battery and Memory	3	Discussion	Black Board

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks.	OBT/PP T 5 Mks.	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

End Semester - UG

Levels	Section A (i) 5 Mks.	Section A (ii) 5 Mks.	Section B 8 Mks.	Section C 12 Mks.	Section D 20 Mks.	Section E 10 Mks.	Total 60Mks.	
K1	5	5	-	4	-	-	14	23.33 %
K2	-	-	8	4	-	-	12	20 %
K3	-	-	-	-	20	-	20	33.33 %
K4	-	-	-	4	-	10	14	23.34 %
Total	5	5	8	12	20	10	60	100 %

CIA	
Scholastic	35

Non Scholastic	5
	40

EVALUATION PATTERN

SCHOLASTIC					NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

UG CIA Components

				Nos				
C1	-	Test (CIA 1)		1	-	10	Mks	
C2	-	Test (CIA 2)		1	-	10	Mks	
C3	-	Assignment		1	-	5	Mks	
C4	-	Open Book Test/PPT		2 *	-	5	Mks	
C5	-	Quiz		2 *	-	5	Mks	
C6	-	Attendance			-	5	Mks	

****The best out of two will be taken into account***

COURSE OUTCOMES

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

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Understand the infrastructure to develop mobile communication systems.	K1& K2	PSO1& PSO2
CO 2	Identify the characteristics of different multiple access techniques in mobile communication.	K1& K2	PSO3
CO 3	Analyse the measures GSM systems and the entire protocol architecture of GSM.	K3 & K4	PSO4
CO 4	Understand the GPRS technologies and architecture for communication using Mobile Devices.	K1& K2	PSO3&PSO4
CO 5	Illustrate the Security issues in Mobile Computing.	K3 & K4	PSO6, PSO7 & PSO8

Mapping of COs with PSOs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	3	3	2	2	2	1	1	1
CO2	1	1	3	1	2	2	2	1
CO3	1	2	1	3	2	2	2	2
CO4	2	2	3	3	2	3	2	2
CO5	1	2	1	1	1	3	3	3

Mapping of COs with POs

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

Note: ♦ Strongly Correlated – 3
Weakly Correlated -1

♦ Moderately Correlated – 2

♦

COURSE DESIGNER:

1. Staff Name: MRS. T. CHARANYA NAGAMMAL

Forwarded By



V. Mageshwari

**HOD'S Signature
& Name**

Skill Development 100%