

Course Code	Title		
18U3CKC101	Core Paper I Programming in C		
Semester: I	Credits:4	CIA :25 Marks	ESE:75 Marks

Course Objective:

To develop programming skills using the basics and fundamentals of C programming language and enable effective usage of arrays, structures, pointers and file management.

Course Outcomes:

K1	CO1	List the different data types in C programming
K2	CO2	Understanding the programs using control statements
K3	CO3	Develop and implement applications using arrays , strings and functions
K4	CO4	Examine utilization of memory using pointer and file concept

Department offered: Computer Science

Unit	Description	Text Book	Chapter
I	Basic of C Programming: History and Features of C - Importance of C – Sample Programs-The Structure of a C Program - Programming Style - Executing C Program - Constants ,Variables and Data Types- Operators and Expression	1	1,2,3
Instructional Hours			12
II	Input – Output Organization: Input and Output Operation – Reading / Writing Character- Formatted input/output Functions- Decision Making and Branching - Decision Making and Looping	1	4,5,6
Instructional Hours			12
III	Arrays, Stings and Functions: One Dimensional -Two Dimensional Arrays –Multi Dimensional Arrays -String operations: length, compare, concatenate, copy–Introduction to functions: Function prototype, function definition, function call, Built-in functions (string functions, math functions) – Recursion	1	7,8,9
Instructional Hours			12
IV	Structures and Unions : Defining a Structure - Advantage of Structure - Size of Structure - Structures and Functions -Unions Pointers in C: Understanding Pointers –Accessing the Address of a Variable-Declaring Pointer variable- Pointer Expressions-Pointer and Arrays-Pointer and Character Strings-Array of Pointers	1	10,11
Instructional Hours			12
V	File Management in C: Introduction to File Management -	1	12

Opening/Closing a File – Input / Output operations on Files-Random Access File	
Instructional Hours	12
Total Hours	60

Text Book(s):

1. E. Balagurusamy , **Programming in ANSI C**, Tata McGraw- Hill Publications, Fourth Edition, 2008

Unit I: Sections: 1.1 to 1.9, 2.1 to 2.8, 3.1 to 3.13 (Chapter 1,2 and 3)

Unit II: Sections: 4.1 to 4.5, 5.1 to 5.9, 6.1 to 6.6 (Chapter 4, 5 and 6)

Unit III: Sections: 7.1 to 7.7, 8.1, 8.8.6 to 8.8 (Chapter 7, 8 and 9)

Unit IV: Section: 10.1 to 10.5, 10.9, 11.1 to 11.8 (Chapter 10 and 11)

Unit V: Sections: 12.1 to 12.6 (Chapter 12)

Reference Book(s):

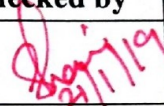
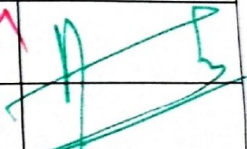
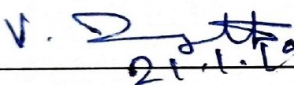

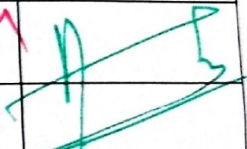
1. Yashwant Kanitkar , **Let us C**, BPB publications, Seventh Edition, 2007
2. V. Rajaraman , **Computer Programming in C**, PHI publications, First Edition, 2002
3. Byron S. Gottfried, **Theory and Problems of Programming with C**, Schaum's Outline Series, Tata McGraw- Hill Publications, 2006

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	M	H	H	M	M
CO 2	H	H	H	M	M
CO 3	M	H	H	M	M
CO 4	H	M	H	H	M

Course Designed by	Verified by	Checked by	Approved by
V. SUHANTHI	P.K. Mang Kumar		
V.  21.1.19	 21.1.19	Dean Academics	

21 JAN 2019

Course Code	Title		
18U3CKC102	Core Paper II		
	Digital Fundamentals And Computer Architecture		
Semester: I	Credits: 4	CIA : 25	ESE :75

Course Objective:

To enables the students to know about the Operations in digital computer, Boolean algebra, CPU Architecture, memory design and its functionality

Course Outcomes:

K1	CO1	Understand basic components of digital computer with its various operations
K2	CO2	Apply Boolean algebra and logical circuit diagram
K3	CO3	Classify Input – Output organization and priority interrupt
K4	CO4	Classify memory organization and multiprocessor in digital computers

Offered by: Computer Application

Course Content

Instructional Hours / Week: 4

Unit	Description	Text Book	Chapter
I	Digital Logic – Digital Operations - Digital Computers . Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code. Arithmetic Circuits: Half adder, Full adder, Parallel binary adder, BCD adder, Serial Adder, Half subtractor, Full subtractor, Parallel binary subtractor- Digital Logic: the Basic Gates –NOR, NAND, XOR Gates.	1	1
Instructional Hours			12
II	Combinational Logic Circuits: Boolean algebra -Karnaugh map – Canonical form 1 – Construction and properties –Implicants – Don’t care combinations - Product of sum, Sum of products, simplifications. Sequential circuits: Flip-Flops: RS, D, JK, and T - Multiplexers – Demultiplexers – Decoder -Encoder – shift registers-Counters	1	1

Instructional Hours			12
III	Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. Asynchronous data transfer: Strobe Control and Handshaking- Modes of Transfer	2	11
Instructional Hours			12
IV	Priority Interrupt: Daisy- Chaining Priority, Parallel Priority Interrupt. Direct Memory Access: DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication-Serial Communication-Character Oriented Protocol, Data Transparency, Bit Oriented Protocol.	2	11
Instructional Hours			12
V	Memory Organization: Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing into Cache Initialization. Multiprocessor : Interconnection Structure, Interprocessor Arbitration, Interprocessor Communication and Synchronization.	2	12 & 13
Instructional Hours			12
Total Hours			60

Text Book(s):

1. V.K. Puri & Henry , **Digital Electronics Circuits And Systems** , TMH, 1997.
2. M. Morris Mano , **Computer System Architecture** , PHI publications,2000.

Unit I : Text book 1: Sections: 1.1.3 to 1.1.8, 1.1.10 – 1.1.14, 1.4.2 to 1.4.5, 1.4.7 to 1.4.9, 1.2.2, 1.2.6 to 1.2.7, 1.2.9 (**Chapter 1**)

Unit II: Text book 1: Sections: 1.2.1, 1.2.11 to 1.2.15, 1.2.17 to 18, 1.5.1 to 1.5.3, 1.5.6, 1.5.9 to 1.5.10, 1.6.2 to 1.6.9 (**Chapter 1**)

Unit III: Text book 2: Sections: 11.2 to 11.4 (**Chapter 11**)

Unit IV: Text book 2: Sections: 11.5 to 11.8 (**Chapter 11**)

Unit V : Text book 2: Sections: 12.1, 12.2, 12.4, 12.5, 13.2 to 13.4 (Chapter 12 and 13)

Reference Book:

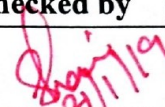
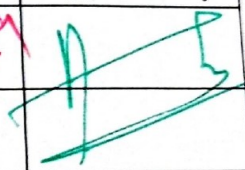
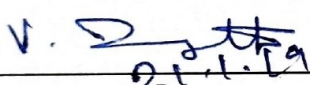
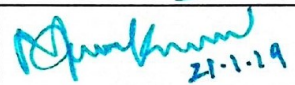
1. M. Carter , **Computer Architecture** , Schaum‘S Outline Series, TMH, 1996.
2. Albert Paul Malvino & Donald P Leach , **Digital Principles And Applications**, TMH,2006.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	M	H	M
CO2	H	M	M	H	M
CO3	H	M	M	H	M
CO4	H	H	M	H	H

Course Designed by	Verified by	Checked by	Approved by
V. SUHANTHI	P.K. Mang Kumar		
V. D.  21.1.19	 21.1.19	Dean Academics	

21 JAN 2019

Course Code	Title			
18U3ITP101	Core Paper III Practical in C Programming			
Semester: I	Credits:4	CIA :40	Marks	ESE:60 Marks

Course Objective:

To make the student learn programming language, problem solving techniques and write program in C language.

Course Outcome:

K1	CO1	Read ,understand and trace the execution of programs in C language
K2	CO2	Ability to write structured programs using control structures and functions
K3	CO3	Write programs that perform operations using derived data types
K4	CO4	Design applications using sequential and random access file processing

Offered by: Information Technology

Course Content

Instructional Hours / Week: 4

LIST OF EXERCISES:

1. Write a Program to demonstrate arithmetic operators
2. Write a Program to demonstrate logical operators
3. Write Program using decision-making statements.
4. Write a Program to calculate electricity bill. Read starting and ending meter reading.
The charges are as follows.

No. of Units Consumed	Rate in (Rs)
1-100	2.00 per unit
101-300	3.50 per unit for excess of 100 units
301-500	5.00 per unit for excess of 300units
501-above	9.50 per unit for excess of 500 units
5. Write a program to perform various string manipulations using built-in functions
6. Write a Program to demonstrate multidimensional array concept
7. Write a program to create structure for an account holder in a bank with following fields: name, account number, address, and balance and display the details of five account holders.
8. Write a program to implement the following concept
a) Call By Value B) Call By Reference.
9. Write a program to implement concept of recursion function
10. Write a program to implement concept of pointers
11. Write a program copies the contents of one file to another file

Text Book(s):

1. E.Balagurusamy – Programming in ANSI C,Tata McGraw- Hill Publications, Fourth Edition, 2008.

Reference Book(s):

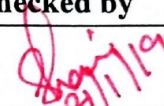
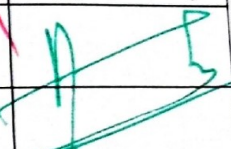
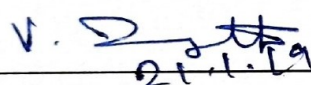

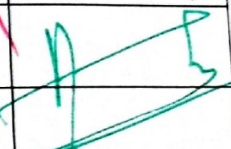
1. Yashwant Kanitkar - Let us C, BPB publications, Seventh Edition, 2007.
2. V. Rajaraman - Computer Programming in C, PHI publications, First Edition, 2002

Tools for Assessment (40)

Laboratory Performance (K1, K2, K3)	Laboratory Performance (K4, K5, K6)	Test 1	Test 2	Observation Note Book	Attendance	Total
5	5	10	10	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	L	H	L	H
CO 2	M	M	M	H	H
CO 3	H	M	L	M	H
CO 4	M	M	H	M	H
CO 5	H	H	L	H	H

Course Designed by	Verified by	Checked by	Approved by
V. SUHANTHI	P.K. Mang Kumar	 21/1/19	
V.  21.1.19	 21.1.19	Dean Academics	

21 JAN 2019

Course Code	Title		
18U3CK203	Core Paper IV: Programming with C++		
Semester: II	Credits: 4	CIA : 25 Marks	ESE:75 Marks

Course Objective

To make the students understand the Object Oriented Paradigm, design technique, syntax of C++ and file processing and exception handling techniques.

Course Outcomes (CO)

K1	CO1	Identify the syntax of a C++ program
K2	CO2	Design and implement C++ programs for any given problem.
K3	CO3	Understand an existing program and modify it as per the requirements.
K4	CO4	Identify the errors and debug

Offered by: Information Technology

Course Content

Instructional Hours / Week: 4

Unit	Description	Text Book	Chapter
I	Fundamentals – Basic Concepts of Object–Oriented Programming – Benefits of OOP– Object oriented Languages – Applications of OOP What is C++?- Applications of C++- A simple C++ Program- Structure of C++- I/O Statements- Creating the source file- Compiling and Linking- Tokens- Keywords- Identifiers and Constants- Basic Datatypes- User defined Datatypes- Derived Datatypes	1	1,2,3
Instructional Hours			12
II	Expressions and Control Structures- Declaration of variables-Operators in C++- Scope Resolution Operator- Manipulators-Expressions in C++- control structures. Functions-The Main Function- Function Prototyping- Call by reference- return by reference- Inline functions.	1	3,4
Instructional Hours			12
III	Classes and Objects - Specifying a class- Defining member functions- A C++ Program with class-Private Member Functions- Static Data Members- Static Member Functions- Friend Functions. Constructors and Destructors-Parameterized Constructor-Copy Constructor- Constructors with Default arguments- Dynamic Constructors- Destructors.	1	5,6
Instructional Hours			12

IV	Operator Overloading- Defining- Unary Operator Overloading- Binary Operator Overloading- Function Overloading-Type Conversions Inheritance- Introduction-Defining Derived classes-single-multilevel-multiple-Hierarchical-Hybrid Inheritance. Pointers- Pointers to Objects- Pointers to derived classes- Virtual Functions.	1	7,8,9
Instructional Hours			12
V	Working With Files- Classes for file Stream Operations- Opening and closing a file – Detecting EOF – File modes- Sequential Input-Output Operations-Exception Handling-Command Line arguments	1	11
Instructional Hours			12
Total Hours			60

Text Book(s):

1.E.Balagurusamy,**Object–Oriented Programming with C++**, Tata McGraw- Hill Publications, Sixth Edition, 2013.

Unit I : Sections: 1.4 to 1.8, 2.1 to 2.8, 3.2 to 3.7(Chapter 1,2 and 3)

Unit II: Sections: 3.10, 3.13 to 3.14, 3.17, 3.19, 3.24, 4.2 to 4.6 (Chapter 3 and 4)

Unit III: Sections: 5.3 to 5.5, 5.8, 5.11 to 5.12, 5.15, 6.3,6. 5, 6.7, 6.8, 6.11(Chapter 5 and 6)

Unit IV: Sections: 7.2 to 7.4, 7.8,8.1 to 8.3,8.5 to 8.8,9.2,9.4 to 9.5 (Chapter 7,8 and 9)

Unit V: Sections: 11.2 to 11.5, 11.7, 11.10, 13.1 to 13.5 (Chapter 11 and 13)

Reference Book(s) :

1. Kamthane, **Object Oriented Programming with ANSI and Turbo C++**, Person Education, 2016.
2. John R Hubbard, **Programming with C++**, Tata McGraw- Hill Publications, Second Edition, 2015.

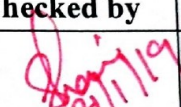
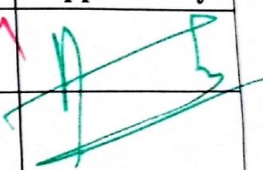
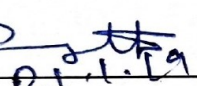
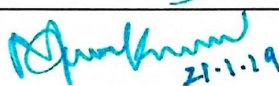
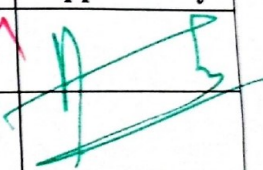
Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	M	H
CO2	H	H	H	M	M
CO3	H	H	H	H	M
CO4	H	H	H	L	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by	Checked by	Approved by
V. SUHANTHI	P.K. Mang Kumar	 21/1/19	
V. D.  21.1.19	 21.1.19	Dean Academics	

21 JAN 2019

Course Code	Title		
18U3CKC204	Core Paper V Data Structures		
Semester: II	Credits: 4	CIA: 25 Marks	ESE:75 Marks

Course Objective:

To enable the students to understand about the various techniques such as Linked list, Searching and Sorting and apply them to solve complex programs.

Course Outcomes:

K1	CO1	Tell about various operations such as searching and sorting
K2	CO2	Understand about the efficient storage mechanism of data
K3	CO3	Choose appropriate data structures for solving the complex problem
K4	CO4	Analyze the various algorithms to solve real world problem using any programming language

Offered by: Computer Science

Course Content

Instructional Hours/Week: 4

Unit	Description	Text Book	Chapter
I	Introduction: Overview - How to create Programs - How to Analyze Programs. Arrays: Axiomatization - Sparse Matrices - Representation of Arrays. Stacks & Queues: Fundamentals - Evaluation of Expressions - Multiple Stacks and Queues.	1	1,2,3
Instructional Hours			12
II	Recursion: Recursive definition and process - recursion in C - Writing Recursive program - simulating Recursion - efficiency of recursion. Queues and List: The queue and its sequential representation - Linked list - List in C - An example Simulation using linked list - other list structure.	2	3,4
Instructional Hours			12

III	Trees: Binary Tree - Binary Tree representation - the Huffman algorithm - representing list as Binary - Trees and their applications - Game trees.	2	5,8
	Graphs: A Flow problem - The linked representation of Graph - Graph traversal and spanning forests		
Instructional Hours		12	
IV	Internal Sorting: Insertion Sort - Quick Sort - 2-Way Merge Sort - Heap Sort - Shell Sort.	1	7,8
	External Sorting: Storage Devices - K-Way Merging- Sorting With Tapes: Balanced Merge Sorts - Polyphase Merge.		
Instructional Hours		12	
V	Symbol Table: Static Tree Tables - Dynamic Tree Tables - Hash Tables: Hashing Functions- Overflow Handling.	1	9, 10
	Files: Files, Queries and Sequential Organizations- Index Techniques - File Organization: Sequential Organization- Random Organization- Linked Organization.		
Instructional Hours		12	
Total Hours		60	

Text Book(s):

1. Ellis Horowitz & Sartaj Sahni, **Fundamentals of Data Structures**, Galgotia Publication.
2. Aaron M. Tenenbaum, Yedidyah Langsam, Moshe J. Augenstein, **Data Structure using C**, Pearson Education, 2009.

Unit I: Sections: 1.1 to 1.4, 2.1 to 2.4 and 3.1 to 3.4 (Text Book 1: Chapter 1, 2 and 3)

Unit II: Sections: 3.1 to 3.4, 4.1 to 4.5 (Text Book 2: Chapter 3 and 4)

Unit III: Sections: 5.1 to 5.6 (Text Book 2: Chapter 5)

Unit IV: Section: 7.1 to 7.8, 8.1 to 8.3 (Text Book 1: Chapter 7 and 8)

Unit V: Section: 9.1 to 9.3, 10.1, 10.3 (Text Book 1: Chapter 9 and 10)

Reference Book(s):

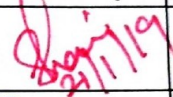
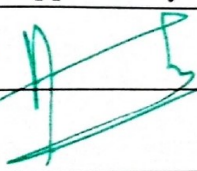
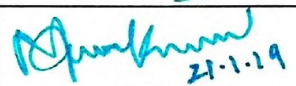
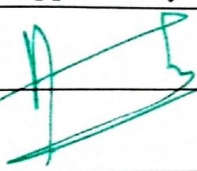
1. Ellis Horowitz, Sartaj Sahni & Sanguthevar Rajasekaran, **Fundamentals of Computer Algorithms**, Galgotia Publications Pvt Ltd, 1999.
2. Jean-Paul Tremblay and Paul G. Sorenson, **An Introduction to Data Structures with Applications**, Second Edition, Tata McGraw Hill, 2008
3. Mark Allen Weiss, **Data Structures and Algorithm Analysis in C**, Florida International University, Pearson Education, Second Edition, 1997.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	M	L
CO2	H	M	H	M	M
CO3	H	M	H	M	M
CO4	H	H	M	M	H

Course Designed by	Verified by	Checked by	Approved by
V. SUHANTHI	P.K. Mang Kumar		
V. Suhanthi 21.1.19	 21.1.19	Dean Academics	

21 JAN 2019

Course Code:	Title :		
18U3ITP202	Core Paper V: Practical in C++ Programming		
Semester: 2	Credit: 4	CIA : 40 Marks	ESE: 60 Marks

Course Objective:

To make the students understand the Object Oriented Paradigm, design technique, syntax of C++ and file processing and exception handling techniques.

Course Outcome(CO)

K1	CO1	Design and implement C++ programs for any given problem.
K2	CO2	Understand an existing program and modify it as per the requirements.
K3	CO3	Identify the syntax of a C++ program
K4	CO4	Identify the errors and debug
K5	CO5	Identify the output of a C++ program without actually executing it.

Offered by

Course Content

Instructional Hours / Week: 4

S. No.	List of Practical
1	Write a C++ Program to illustrate the usage of function using call by reference.
2	Write a C++ Program to illustrate the usage of inline functions
3	Write a C++ Program to illustrate the usage of scope resolution operator.
4	Write a C++ Program to illustrate function overloading
5	Write C++ Programs and incorporating various forms of Inheritance
6	Write a C++ Program to illustrate the use of Constructors and Destructors
7.	Write a C++ Program to illustrate friend functions
7	Write a Program to illustrate Static member and methods
8	Write a C++ Program to illustrate the usage of pointers
9	Write a C++ Program to illustrate Virtual functions
10.	Write a C++ Program to illustrate the functions of a file.
11.	Write a C++ Program to illustrate Exception Handling

Tools for Assessment (40)

Laboratory Performance (K1, K2, K3)	Laboratory Performance (K4, K5, K6)	Test 1	Test 2	Observation Note Book	Attendance	Total
5	5	10	10	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	H	H
CO 2	H	H	M	H	H
CO 3	H	H	M	H	H
CO 4	M	M	H	M	H
CO 5	H	H	M	M	H

H-High; M-Medium; L-Low.

Course Designed by	Verified by	Checked by	Approved by
V. SUHANTHI	P.K. Mang Kumar	<i>[Signature]</i> 21/1/19	<i>[Signature]</i>
V. <i>[Signature]</i> 21.1.19	<i>[Signature]</i> 21.1.19	Dean Academics	<i>[Signature]</i>

21 JAN 2019

Course Code	Title		
18U3CJC305	Core Paper VII Client Server Architecture		
Semester: III	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To enable the students to understand the concepts of Client / Server applications and architecture.

Course Outcomes (CO):

CO1	Able to understand about the Client/Server applications.
CO2	Understand the Client/Server components and about GUI.
CO3	Gains knowledge about the types of servers.
CO4	Develop the knowledge about SQL Database servers.
CO5	To learn the concepts of Data Warehousing and distributed objects.

Offered by: Information Technology

Course Content

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Overview of Client/Server Computing: What is client/server computing? – Benefits of client/server computing. Overview of Client/Server applications: Components of client/server applications – Classes of client/server applications – Categories of client/server applications.	1	1,3
Instructional Hours			15
II	Client Hardware and Software: Client components – Clients operating systems – What is a GUI? – Database Access. The Server Hardware: Categories of Servers – Features of Server machines – Classes of Sever machines.	1	5,8
Instructional Hours			15
III	Welcome to Client Server Computing:- What is Client/Server?- Will the real client/server stand up? Types of servers- 2-Tier versus 3-Tier. Clients, Servers and Operating Systems: The anatomy of a server program-What does a server need from an OS? – Client Anatomy.	2	2,5
Instructional Hours			15
IV	SQL Database Servers: The fundamentals of SQL and relational databases-What does a database server do? - Stored Procedures, Triggers and rules.SQL middleware and federated databases: SQL Middleware: The Options – Will the real SQL API stand up?.	2	10,11,12
Instructional Hours			15

V	Data Warehouses: Information where you want it: Where is that OLTP data kept? – The Data Warehouse. Distributed Objects and Components: What distributed objects promise? – From Distributed objects to components – 3-Tier Client/Server, Object style.	2	12,21
Instructional Hours			15
Total Hours			75

Text Book(s):

1. Robert Orfali, Dan Harkey, Jeri Edwards, “ The Essential Client / Server Survival Guide” ,Third Edition, John Wiley & sons 2001.
2. Dawana Travis Dewire, “Client/Server Computing”, Tata McGraw Hill 2003.

Reference Book(s):

1. Patrick Smith, Steve Guengerich, “Client/Server Computing”, Second Edition, Prentice Hall 2002.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	M	H
CO 2	H	M	H	H	H
CO 3	H	H	M	H	H
CO 4	H	H	M	H	H
CO 5	H	H	H	M	H

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
M. Keerthika	P.K. Manoj Kumar		
For V.	For	Dean Academics	

21 JAN 2019

Course Code	Title		
18U3CKC306	Core Paper VIII Java Programming		
Semester: III	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To gain knowledge about basic Java language syntax and semantics to write java programs and understand the principles of classes, methods, inheritance, polymorphism and packages.

Course Outcomes (CO):

CO1	Remembers the fundamental concepts of Object-oriented Programming
CO2	Understands about different data types, statements, concepts and Dbase Connectivity
CO3	Apply the concepts and develop the program
CO4	Analyze the program complexity for the problem given
CO5	Skill to debug and execute the program for the given problem

Offered by: Information Technology

Course Content

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Fundamentals of Object-Oriented Programming: Object-Oriented Paradigm – Basic Concepts of Object-Oriented Programming – Benefits of Object-Oriented Programming – Application of Object-Oriented Programming.	1	1
	Java Evolution: History – Features – How Java differs from C and C++ – Java and Internet – Java and www – Web Browsers.	1	2
	Overview of Java: simple Java program – Structure – Java Tokens – Statements – Java Virtual Machine.	1	3
		Instructional Hours	15
II	Constants, Variables, Data Types - Operators and Expressions - Decision Making and Branching: if, if...else, nested if, switch, ? : Operator - Decision Making and Looping: while, do, for – Jumps in Loops - Labeled Loops – Classes, Objects and Methods.	1	4,5,6, 7,8
			Instructional Hours
III	Arrays, Strings, Vectors - Interfaces: Multiple Inheritance - Packages: Putting Classes together - Multithreaded Programming	1	9,10,11, 12
			Instructional Hours
IV	Managing Errors and Exceptions - Applet Programming – Graphics Programming		13,14,15
		Instructional Hours	15
V	GUI using Java AWT: What is AWT in Java, Class Hierarchy	2	6

Layout Manager, Label class, TextField class, Button Class, Choice class, List Class, Checkbox Class		
Database Access Using JDBC and SQL: Database Basics, Client-Server System-Two- tier, Three-tier, Multi-tier system, Database Access and Java – What does JDBC do – JDBC - Components – Creating a Table – Data Retrieval – Example	2	21
	Instructional Hours	15
	Total Hours	75

Text Book(s):

1. E. Balagurusamy, **Programming with Java – A Primer**, Tata McGraw Hill Publication, 3rd Edition, 2007
2. Keyur Shah, **Java 2 Programming**, Tata McGraw – Hill Publication, 2007.

Reference Book(s):

1. Patrick Naughton & Hebert Schildt, **The Complete Reference Java 2**, Tata McGraw Hill Publication, 3rd Edition , 2002
2. John R. Hubbard, **Programming with Java**, Tata McGraw Hill Publication, 2nd Edition, 2009

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	M	M
CO 2	H	H	H	M	M
CO 3	H	H	H	M	M
CO 4	H	H	H	M	M
CO 5	H	H	H	M	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
L. Ganaprasanbikai	P.K. Manoj Kumar		
		Dean Academics	
21.1.19	21.1.19		121 JAN 2019

Course Code	Title		
18U3ITP303	Core Paper IX Practical in Java Programming		
Semester: III	Credits: 4	CIA : 40 Marks	ESE: 60 Marks

Course Objective:

To enable the students to develop problem solving skills and programming ability in Java Language

Course Outcomes (CO):

CO1	Develop the applications using programming concepts
CO2	Develop the applications for database connectivity
CO3	Able to debug the program
CO4	Execute and evaluate the problem given
CO5	Implement the concepts to solve the real word problems

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

S.No	List of Practical
1.	Write a Java program to insert an element (specific position) into an array
2.	Write a Java Program to implement the concept of multiple inheritance using Interfaces
3.	Write a program to implement the concept of Exception Handling using predefined exception.
4.	Write a Java Program to create an Exception called payout-of-bounds and throw the exception
5.	Write a Java Program to implement the concept of multithreading with the use of any three multiplication tables and assign three different priorities to them
6.	Write a Java Program to draw several shapes in the created windows
7.	Write a Java program to import classes from user defined package and creating packages.
8.	Write a Java program for using Graphics class - to display basic shapes and fill them - draw different items using basic shapes - set background and foreground colors.
9.	Write a Java Program to create a frame with four text fields name, street, city and pin code with suitable tables. Also add a button called my details. When the button is clicked its corresponding values are to be appeared in the text fields
10.	Write a Java Program to create a frame to implement checkbox group
11.	Write a Java program of database connectivity using JDBC-ODBC drivers
Total Hours 90	

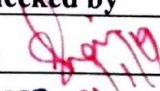
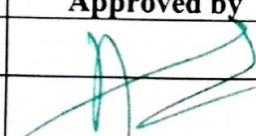
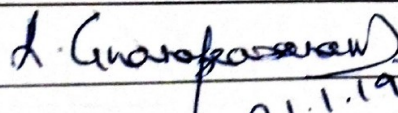
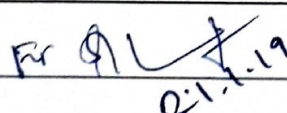
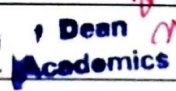

Tools for Assessment (25 Marks)

Program Creativity	Program Execution	Test1	Test 2	Observation Note Book	Attendance	Total
5	5	10	10	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	M	M
CO 2	H	H	H	M	M
CO 3	H	H	H	H	H
CO 4	H	H	H	M	M
CO 5	H	H	M	M	H

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
L. Ganaprasanmbikai	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

121 JAN 2019

Course Code	Title		
18U3ITA303	Allied Paper III Nano Technology		
Semester: III	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To inculcate the students to know the fundamental concepts of Nano technology and implement in real time environment

Course Outcomes (CO):

CO1	Remember the general concept of molecular, DNA, cells etc
CO2	Understand the concept of Nanotechnology, Nanomaterials, Nanocomputer etc
CO3	Apply the concept in various fields like industries, medical etc
CO4	Analyse the different types of Tools and Technologies
CO5	Evaluate by applying the concept in various real world problems

Offered by: Information Technology

Course Content

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Introduction – What is Nanometer? – What is Nanotechnology? – Idea of Nanotechnology – General Purpose Nanotechnology – Why Nanotechnology? – Why Now? – The Next Industrial Revolution – Tools and techniques – History of Nanotechnology – Uses of Nanotechnology – Future of Nanotechnology – New Potential Nanotechnology Hazards – Safety, Hazard and Public Policy Issues	1	1
Instructional Hours			15
II	Tools and Techniques – Basic Idea of Nanotechnology – Techniques used in Nanotechnology – Tools used – Electron Microscope – Imaging in the TEM – Drawbacks of TEM – Applications of TEM – How a Typical SEM Functions – Differences between SEM and TEM – Sample Preparation for an Electron Microscope – Disadvantages of Electron Microscope – Atomic Force Microscope – Working of AFM	1	2
Instructional Hours			15
III	Nanomaterials - What are Nanomaterials? – Properties of Nanomaterials – Methods to Produce Nanomaterials – Sol-Gel Synthesis Method – Applications of Nanomaterials – Carbon Nanomaterials – Carbon Nanocones – Methods to Produce Nanocones – Method to Produce Fullerenes – Properties of Fullerenes – Solvents in which Fullerenes are Soluble – Safety Issues – How to Produce Nanotubes – Types of Nanotubes	1	3
Instructional Hours			15

IV	Nanocomputer – Proposed Types of Nanocomputers – Nanotechnology Makes Further Miniaturization Possible – Nanochip Pushes Computing Limits – How DNA Computers Will Work – A Fledgling Technology – A Successor to Silicon – Towards Quantum Information Technology – Shrinking Computer – Nanocomputers – Quantum Computers – Nanocomputers in a Bottle – Nanocomputers on the Horizon – Smaller than Small – Ramp it up – Spray-on Nanocomputers are Coming	1	9
Instructional Hours		15	
V	Nanotechnology and the Possibilities for Space Exploration – Today’s Greatest Challenge – Potential Space Benefits – Resources in Space – Future Orbital Developments – Space Stations of the Future – Technical Difficulties – Radiation Shielding – Space Elevator – Leapfrogging Effect – Space Elevator – SPS – NYU Scientists and DNA Devices – New Breed of Robots – Enter the Nanobots – Chill Factor – Jovian Ballon – NASA and the JSC – JSC Nanotube Project Goals	1	10
Instructional Hours		15	
Total Hours		75	

Text Book(s):

1. Manasi Karkare, “Nanotechnology Fundamentals and Applications”, I.K. International Publishing House Pvt Ltd. 2008.

Reference Book(s):

1. Charles P.Poole, Frank J Owens “Introduction to Nano Technology”, Wiley India Pvt Ltd , 2006.
2. Bharat Bhushan “Springer Handbooks of Nano Technology “, 4th Edition

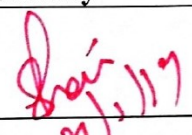
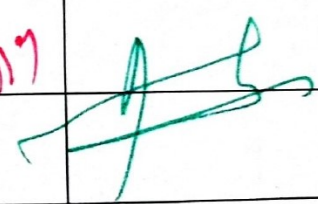
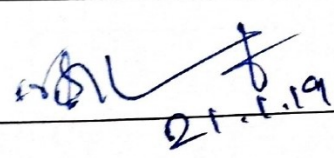
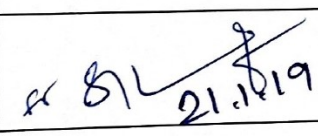

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	S	H	H	M
CO 2	H	H	H	S	M
CO 3	H	S	H	H	H
CO 4	H	S	S	H	H
CO 5	H	S	H	H	S

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U4ITZ301	Skill Based Paper I Practical in Multimedia		
Semester: III	Credits: 3	CIA : 20 Marks	ESE: 55 Marks

Course Objective:

To enable the students to know the fundamental tool of image editing software and make them to apply in real world business.

Course Outcomes (CO):

CO1	Understand the basics of GIMP
CO2	To transform a photograph to drawing
CO3	To work with tools
CO4	To work with scripting
CO5	To work with animations

Offered by: Information Technology

Course Content

Instructional Hours / Week: 4

S.No	List of Practical
1.	Create Sun Flower
2.	Animate Plane flying in the Clouds
3.	Create Plastic Surgery for the Nose
4.	Create See-through text.
5.	Create a Web Page
6.	Convert Black and White Photo to Colour Photo
7.	Design a visiting card containing at least one Graphic and text information.
8.	Create an animation to represent the growing Moon.
9.	Create an animation to indicate a ball Bouncing on steps
10.	Simulate movement of a cloud
11.	Display the background given (filename: Tulip.jpg) through your name
12.	Create an animation with the following features. Welcome * letters should appear one by one * the fill colour of the text should change to a different colour after. The display of the full word using flash
Total Hours 60	

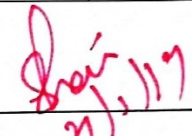
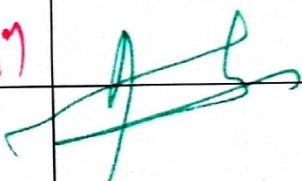
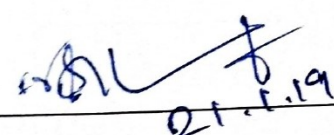
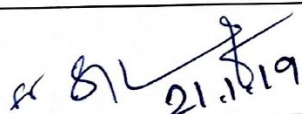

Tools for Assessment (20 Marks)

Program Creativity	Program Execution	Test1	Test 2	Observation Note Book	Attendance	Total
3	3	4	4	3	3	20

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	S	H	H	M
CO 2	H	H	H	M	M
CO 3	H	S	H	H	H
CO 4	H	M	S	H	H
CO 5	H	M	H	H	S

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3CKC407	Core Paper X - Operating System		
Semester: IV	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To develop the fundamentals of Operating Systems, mechanisms of OS and distributed operating system and implement simple OS mechanisms

Course Outcomes (CO):

CO1	List the different architectural components involved in OS design
CO2	Understanding the applications to run in parallel using process
CO3	Develop and implement resource management techniques for timesharing
CO4	Examine protocols of Distributed OS and file sharing in distributed Applications
CO5	Analysis the various operating system operations with case studies

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	Introduction: Types of Operating System- History of Operating System- Features of OS- Applications of OS- Computer Architecture- Hardware Level- Context of a Program- Interrupts	1,2	1,2
Instructional Hours			15
II	Operating System Functions and Structures: Different Services of Operating System- Uses of System calls- Issue of Portability- User’s view of the Operating System- Graphical User Interface- Operating System Structure- Virtual Machine- Booting	2	3
Instructional Hours			15
III	Process Management: – Inter process communication:-The Producer-Consumer Problems-Solutions to the Producer-Consumer Problems-Classical IPC problems- Deadlock- Introduction- Graphical Representation of a Deadlock- Deadlock Prerequisites- Deadlock Strategies	2	6,7
Instructional Hours			15
IV	Memory Management: Single Contiguous Memory Management- Fixed Partitioned Memory Management- Variable Partitions- Paging- Segmentation	2	8
Instructional Hours			15
V	Case Study: Unix-History-Overview-File system-Process states and State Transition-Executing and terminating-Booting	2	13

and login-Process scheduling and memory management
Instructional Hours 15
Total Hours 90

Text Book(s):

- Andrew S. Tanenbaum, **Modern Operating System**, Third Edition, Pearson Educational Inc. 2009.
Unit I: Section 1.1, 1.4 (Chapter 1)
- Achyut S. Godbole, **Operating System**, TATA McGraw Hill Publishing Company Ltd., Second Edition 2006.
Unit I: Section 1.1 to 1.5, 2.1 to 2.8 (Chapter 1 and 2)
Unit II: Section 3.1 to 3.9 (Chapter 3)
Unit III: Section 6.1 to 6.3, 7.1 to 7.4 (Chapter 6 and 7)
Unit IV: Section 8.1 to 8.7 (Chapter 8)
Unit V: Section 13.1 to 13.4, 13.6 to 13.10 (Chapter 13)

Reference Book(s):

- William Stallings, **Operating Systems Internals and Design Principles**, Seventh Edition, Pearson Education Inc. 2012
- Abraham Silberchatz, Peter Baer Galvin, Greg Gagne, **Operating System Concepts**, Seventh Edition, Pearson 2009

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO	PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1		M	H	H	M	M
CO 2		H	H	H	M	M
CO 3		M	H	H	M	M
CO 4		H	M	H	H	M
CO 5		H	M	H	H	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
<i>P.K. Mang Kumar</i>	<i>P.K. Mang Kumar</i> 21.1.19	<i>[Signature]</i> 21/1/19	<i>[Signature]</i>
<i>P.K. Mang Kumar</i>	<i>P.K. Mang Kumar</i>	Dean Academics	21 JAN 2019

Course Code	Title		
18U3CKC408	Core Paper XI Computer Networks		
Semester: IV	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To inculcate knowledge on Networking concepts and technologies like wireless, Broadband and Bluetooth.

Course Outcomes (CO):

CO1	Understand about network hardware, software and uses of computer networks
CO2	Understand Guided Transmission Media, Wireless Transmission, and Communication Satellites
CO3	Understand error detection and correction, elementary data link protocol and Routing algorithms
CO4	Understand and Identify the applications of application layer and network security
CO5	Understand the importance of applications layer and cryptography

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	Uses of computer networks: Business Applications- Home Applications - Mobile Users - and Social Issues. Network Hardware: Personal Area Networks - Local Area Networks - Metropolitan Area Networks - Wide Area Networks, Internetworks. Network software: Protocol Hierarchies - Design Issues for the Layers - Connection-Oriented Versus Connectionless Service - Service Primitives - the Relationship of Services to Protocols - Reference models: The OSI Reference Model - The TCP/IP Reference Model- A Comparison of the OSI and TCP/IP Reference Models.	1	1
Instructional Hours			12
II	Physical Layer - Guided Transmission Media: Magnetic Media – Twisted Pair – Coaxial Cable – Fiber Optics. Wireless Transmission: Electromagnetic Spectrum –Radio Transmission – Microwave Transmission – Infrared and Millimeter Waves – Light Waves. Communication Satellites: Geostationary - Medium-Earth Orbit - Low Earth-orbit Satellites – Satellites versus Fiber.	1	2
Instructional Hours			12

III	<p>Data link Layer: Services Provided to the Network Layer – Framing- Error Control - Flow Control. Error detection and Correction: Error-Correcting Codes - Error-Detecting Codes. Elementary data link Protocols: A Utopian Simplex Protocol- A Simplex Stop-and-Wait Protocol for an Error-Free Channel- A Simplex Stop-and-Wait Protocol for a Noisy Channel. Sliding Window Protocols: One-Bit sliding window protocol – A protocol using Go-Back-N – A Protocol using Selective Repeat.</p>	1	3
Instructional Hours			12
IV	<p>Network layer: Routing algorithm-The Optimality Principle, Shortest Path Algorithm, Flooding, Distance Vector Routing, Link State Routing, Hierarchical Routing, Broadcast Routing, Multicast Routing, Anycast Routing, Routing for Mobile Hosts, Routing in Ad Hoc Networks, Transport layer: Elements of transport protocols-Addressing, Connection Establishment, Connection Release, Error Control and Flow Control, Multiplexing, Crash Recovery The Internet Transport Protocols UDP: Introduction to UDP. TCP- Introduction to TCP, The TCP Service Model, The TCP Protocol, The TCP Segment Header, TCP Connection Establishment, TCP Connection Release, TCP Connection Management Modeling, TCP Sliding Window, TCP Timer Management, TCP Congestion Control.</p>	1	5,6
Instructional Hours			12
V	<p>Application layer: DNS—The Domain Name System, The DNS Name Space, Domain Resource Records, Name Servers, Electronic mail-Architecture and Services, The User Agent, Message Formats, Message Transfer, Final Delivery, Network Security: Cryptography-Introduction to Cryptography, Substitution Ciphers, Transposition Ciphers, One-Time Pads, Two Fundamental Cryptographic Principles.</p>	1	7,8
Instructional Hours			12
Total Hours			90

Text Book(s):

1. Andrew S. Tanenbaum; Computer Networks, 4th edition, PHI

Reference Books:

1. Achyut Godbole, Data Communication and Networks, 2007, TMH.
2. Uyles Black, Computer Networks: Protocols, Standards, and Interfaces, 2nd ed., PHI

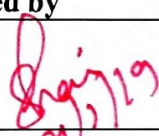
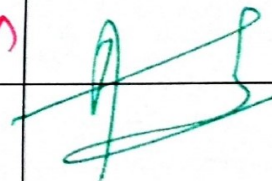
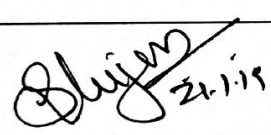
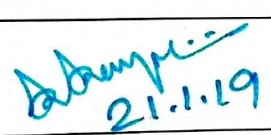

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	M	H	H	M	M
CO 2	H	H	M	M	M
CO 3	M	H	H	H	H
CO 4	H	M	H	H	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
N.P. Shiju	Dr. K. Kanagalakshmi		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3ITP404	Core Paper XII Practical in Operating System		
Semester: IV	Credits: 4	CIA : 40 Marks	ESE: 60 Marks

Course Objective:

To know about the basics of shell Script programming language

Course Outcomes (CO):

CO1	Understanding the shell programming concept
CO2	To review the file concept in the working environment
CO3	Compare the different management techniques
CO4	To Apply socket communication in Program
CO5	Able to apply various scripting concept in programs

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

S.No	List of Practical
1	Write a shell script to stimulate the file commands: rm, cp, cat, mv, cmp, wc, split, diff.
2	Write a shell script to show the following system configuration : a. currently logged user and his log name b. current shell , home directory , Operating System type , current Path setting , current working directory c. show currently logged number of users, show all available shells d. show CPU information like processor type , speed e. show memory information
3	Write a Shell Script to implement the following: pipes, Redirection and tee commands.
4	Write a shell script for displaying current date, user name, file listing and directories by getting user choice.
5	Write a shell script to implement the filter commands.
6	Write a shell script to remove the files which has file size as zero bytes.
7	Write a shell script to find the sum of the individual digits of a given number. and icons for your website
8	Write a shell script to find the greatest among the given set of numbers using command line arguments.
9	Write a shell script for palindrome checking.
10	Write a shell script to print the multiplication table of the given argument using for loop.
	Total: 90 hrs

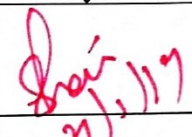
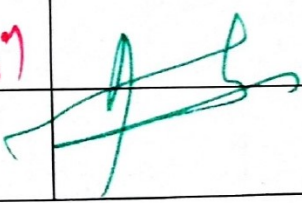
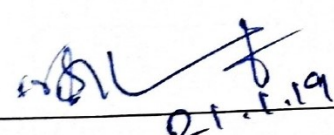


Tools for Assessment (40 Marks)

Program Creativity	Program Execution	Test1	Test 2	Observation Note Book	Attendance	Total
5	5	10	10	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	M	H	H	M	M
CO 2	H	H	H	M	M
CO 3	M	H	H	M	M
CO 4	H	M	H	H	M
CO 5	M	H	H	M	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
			

21 JAN 2019

Course Code	Title		
18U3ITA404	Allied Paper IV Microprocessor and ALP		
Semester: IV	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To enable the students to apply basic mathematical knowledge to solve the real life business problems

Course Outcomes (CO):

CO1	To understand 8085 architecture
CO2	Gains knowledge about Instruction Set
CO3	Develops assembly language programming skills
CO4	To know peripheral devices and Interfaces
CO5	To Learn various processor

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
8085 Microprocessor Architecture			
I	Evolution of Microprocessors, Memory, Buses, 8085 Pin Diagram, 8085 Architecture, Instruction Cycle, Timing Diagram	1	1,3,5,8,9
Instructional Hours			18
Instruction Set of 8085			
II	Instruction and data formats, Addressing Modes, Status Flags, Intel 8085 instructions set.	2	8,9
Instructional Hours			18
Assembly Language Programming			
III	Assembly language, High-Level language, Stacks, Subroutines, 8085 ALP Addition, Subtraction, Multiplication, Division, Decimal Addition, Multibyte Addition, 1's&2's complement, shifting, Largest/smallest, sum of Series, Square Root, Block of Data Transfer	3	4,5
Instructional Hours			18
Peripheral devices and Interfacing			
IV	Address space partitioning, Memory and I/O Interfacing, Data Transfer Schemes, Interrupts, Generation of control signals, 8255 PPI, 8257 DMA controller. Interfacing ADC 0808, Interfacing DAC 0800	4	7
Instructional Hours			18

<u>Applications</u>		
V	Delay Subroutine, Traffic Light Control System, Water Level Indicator, Stepper Motor Various Processor Intel 8086, Intel Pentium, Motorola 68000, Z80	2 13
		Instructional Hours 18
		Total Hours 90

Text Book(s):

1. Badri Ram , **Fundamentals of Microprocessor and Microcomputers** , Dhanpat Rai Publications, 2012
2. Adithya P Mathur , **Introduction to Microprocessors**, Tata Mc Graw Hill Publication , 2010

Reference Books:

1. Ramesh S. Gaonkar , **Microprocessor Architecture , Programming and Applications with the 8085** , Penram International Publishing(India) Private Limited , 2010
2. Douglas V Hall, **Microprocessor and Interfacing**, Tata Mc Graw Hill Publication , 2012

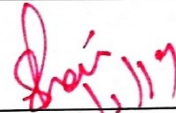

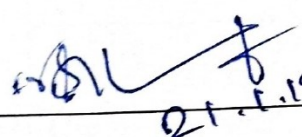
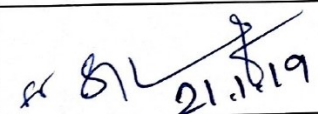

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	H	H
CO 3	H	H	M	H	H
CO 4	H	H	H	M	H
CO 5	H	H	H	H	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19	 Dean Academics	

21 JAN 2019

Course Code	Title		
18U4ITS402	Skill Based Paper II Practical in Joomla		
Semester: IV	Credits: 3	CIA : 20 Marks	ESE: 55 Marks

Course Objective:

To enable the students to know about the concept of Joomla and apply to create web

Course Outcomes (CO):

CO1	Remember various tools
CO2	Understand the concept of Joomla
CO3	Apply the concept in Templates
CO4	Analyze various concepts in Joomla.
CO5	Able to create website

Offered by: Information Technology

Course Content

Instructional Hours / Week: 3

S.No	List of Practical
1	Installing Joomla 3.0 on local host
2	Creating a simple module/Developing a Basic Module
3	Creating Templates
4	Customize Logo
5	Adding Web links
6	Website Backup
	Total Hours 45

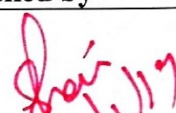
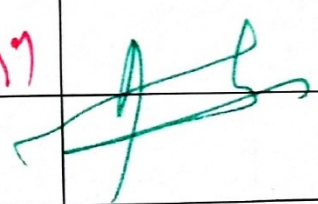
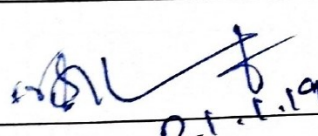


Tools for Assessment (20 Marks)

Program Creativity	Program Execution	Test1	Test 2	Observation Note Book	Attendance	Total
3	3	4	4	3	3	20

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	H	H
CO 3	H	H	M	H	H
CO 4	H	M	H	M	H
CO 5	M	H	H	H	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3CKC509	Core Paper XIII RDBMS & ORACLE		
Semester: V	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To inculcate fundamental knowledge in RDBMS concepts and make them to create, manipulate information with the real time datasets.

Course Outcomes (CO):

CO1	Remember the Data types and fundamentals of database.
CO2	Understanding the concept of Database and Various queries in SQL , PL/SQL
CO3	Applying the concept in various tables to retrieve information.
CO4	Analysing the different types of queries in SQL.
CO5	Able to evaluate the errors in SQL & PL/SQL statements.

Offered by: Information Technology

Course Content

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Introduction: Database - Purpose of Database Systems - Data Models – Database Language – Transaction Management - Overall System Structure.	2	1
	A Relational approach: Relationships –Relational Database Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modelling and Normalization: Data Modeling – Dependency –Normal forms – Dependency Diagrams – De –normalization.	1	1
Instructional Hours			15
II	Oracle: Oracle an introduction – SQL –SQL *Plus Commands – Errors & Help – Alternate Text Editors. Oracle Tables. DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.	1	3,4
Instructional Hours			15
III	Working with Table: Data Management and Retrieval: DML – Adding a new Row/Record – Updating and Deleting an Existing Rows/Records – Retrieving Data from Table - Restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. Functions and Grouping: Built-in functions – Grouping Data. Multiple	1	5,6

Tables: Joins and Set operations: Join – Set operations		
Instructional Hours 15		
IV	PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures and Embedded SQL: Control Structures – Nested Blocks – SQL in PL/SQL – Data Manipulation – Transaction Control statements. PL/SQL Cursors and Exceptions: Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT...FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables.	1 10, 11
Instructional Hours 15		
V	Exceptions – Types of Exceptions. PL/SQL Composite Data Types: Records – Tables. Named Blocks: Procedures – Functions – Packages –Triggers –Data Dictionary Views	1 12,13,14
Instructional Hours 15		
		Total Hours 75

Text Book(s):

1. Nilesh Shah , **Database Systems Using Oracle**, 2nd edition, PHI.
2. Abraham Silberschatz, Henry F.Korth, S. Sudarshan , Database system Concepts , 3rd Edition, McGraw – Hill Companies, inc.

Reference Book(s):

1. Arun Majumdar & Pritimoy Bhattacharya ,**Database Management Systems** , TMH, 2007.
2. Gerald V. Post ,**Database Management Systems** , 3rd Edition, TMH.

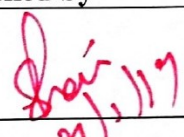
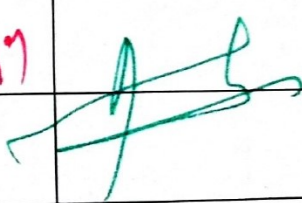
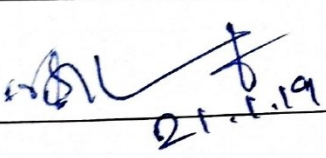
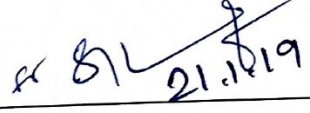

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	M	H	H
CO 2	M	H	M	M	M
CO 3	H	H	M	H	M
CO 4	M	M	H	M	H
CO 5	H	H	H	M	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
			

21 JAN 2019

Course Code	Title		
18U3CKC510	Core Paper XIV – Software Engineering		
Semester: V	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To gain knowledge about basic concepts of Software Engineering

Course Outcomes (CO):

CO1	Able to understand the nature of the software and different types of process models
CO2	Gains knowledge about the requirements stage development of the software
CO3	Analyze the different types of architectural designs of the software
CO4	Evaluates different testing strategies of the software
CO5	Develops the software

Offered by: Information Technology

Course Content

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Introduction to Software Engineering: Evolving role of software- Software- The changing nature of Software- Software Myths. A Generic view of Process- A Layered Technology	1	1
	Software Process Models: Prescriptive models- The Waterfall Model Incremental Process Models- Evolutionary Process Models.	1	3
Instructional Hours			15
II	Requirements Engineering- Requirements Engineering Tasks- Initiating the Requirements Engineering Process- Eliciting Requirements- Building the Analysis Model.	1	7
	Building the Analysis Model- Scenario-Based Modeling- Flow Oriented Modeling.	1	6
Instructional Hours			15
III	Design Engineering: Design Concepts -The design model.	1	9
	Creating an Architectural Design: Representing the System in Context- Defining Archetypes- Refining the Architecture into Components- Describing Instantiations of the System.	1	10
	Modeling Component-Level Design: What is a Component – Designing Class-Based Components	1	11
	User Interface Design: User Interface Analysis and Design- Interface Design steps.	1	12
Instructional Hours			15
IV	Testing Strategies: Validation testing – System testing – Testing Tactics: Software testing fundamentals – White box testing –	1	13,14

Control structure testing – Black box Testing		
Risk Management: Software Risks – Risk Identification – Risk Projection – Risk Refinement – Risk Mitigation, Monitoring and Management.	1	25
Instructional Hours		15
V Reengineering: Reengineering – Software Reengineering – Reverse Engineering- Restructuring: Code Restructuring- Data Restructuring.	1	29
Instructional Hours		15
Total Hours		75

Text Book(s):

1. Roger S Pressman, **Software Engineering a Practitioner’s Approach**, Seventh Edition, McGraw Hill, International Edition, 2013

Reference Books(s):

1. Richard Fairley, **Software Engineering Concepts**, Tata McGraw-Hill Publishing Company Limited, 2010
2. Waman S. Jawadekar, **Software Engineering – Principles and Practice**, Tata McGraw Hill Publishing Company Limited, 2011

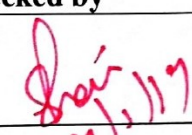
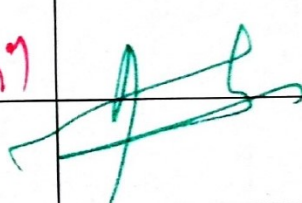
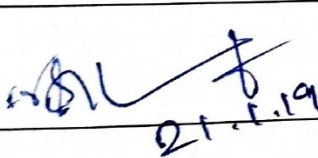
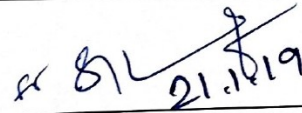

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	M	H	H
CO 2	H	H	H	H	M
CO 3	H	H	H	H	M
CO 4	H	H	H	H	H
CO 5	H	H	H	H	H

H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
			

21 JAN 2019

Course Code	Title		
18U3ITP506	Core Paper XV Practical in Visual Programming		
Semester: V	Credits: 4	CIA : 40 Marks	ESE: 60 Marks

Course Objective:

The purpose of this course is to introduce to students to the field of Visual Basic and the concepts of Database.

Course Outcomes (CO):

CO1	Able to create programs using GUI.
CO2	Form Designing
CO3	Develop programs in Visual Basic.
CO4	Know concepts in Database Management.
CO5	Develop Programs in connectivity

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

S. No	List of Practical's
1	Write a VB program using various tool box
2	Write a VB program using various Controls.
3	Write a Program to design an interface having two list box and perform the following operations on the box:- 1.Shift item from one list to another. 2.Shift all items from one list to another. 3.Copy any selected item to another list box. 4.Copy all items to another list box. 5.Drag items from one list box to another.
4	Write a simple VB program to develop a calculator with basic operation
5	Write a Program to design an interface using option buttons & frame control for Currency Conversion System.
6	Use DAO(Data Access Object) to connect the applications with database(in MSACCESS) named 'employee' having table 'emp_info' with fields emp_id, emp_name, basic_salary, house rent allowance, provident fund, dearness allowance, net_salary,tax. Also performs operations as given below: a)Insert a new record. b>Delete a record. c)Modify/update a record. d)Move on first, next, previous and last record.
7	Create a table and Implement the concept of DDL Commands

8	Create a table and Implement concept of DML, DCL & TCL Commands and perform various Build in functions.
9	Create a Cursor Program For Electricity bill calculation
10	Create a PL/SQL program and work with Procedures And Functions
11	Create a Trigger For Displaying Grade of The Student
12	Design an application which display following information of a student(using oracle)like stud_rollno, stud_regno, stud_name, stud_address, stud_contactno, stud_class, marks in 5different subjects, total and percentage. Also perform following operations using ADODB: a)Insert a new record. b)Delete a record. c)Modify/update a record. d)Search a record.
Total Hours: 90	

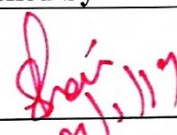
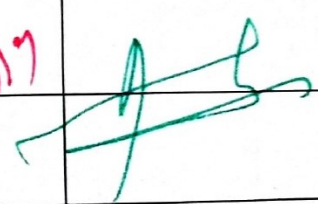
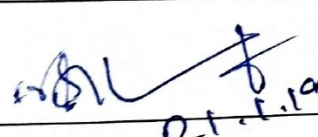
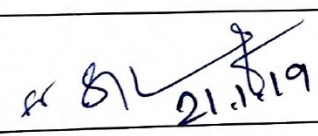

Tools for Assessment (40 Marks)

Program Creativity	Program Execution	Test1	Test 2	Observation Note Book	Attendance	Total
5	5	10	10	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	H	H
CO 2	H	H	M	H	H
CO 3	H	H	M	H	H
CO 4	M	M	H	M	H
CO 5	H	H	H	M	H

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3ITP507	Core Paper XVI Practical in Web Technology		
Semester: V	Credits: 2	CIA : - Marks	ESE: 50 Marks

Course Objective:

The students acquire the skill to choose the technology to use based on the requirements and functionality of the web site.

Course Outcomes (CO):

CO1	To develop an ability to design and implement static and dynamic website
CO2	To develop HTML pages with the help of frames, scripting languages, and evolving technology like DHTML, XML.
CO3	Able to work with CSS
CO4	Analyze different types of features in XML
CO5	Able to design web site

Offered by: Information Technology

Course Content

Instructional Hours / Week: 4

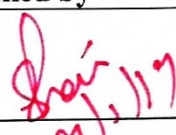
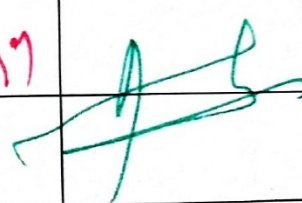
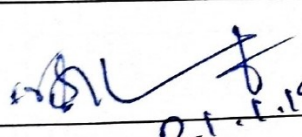
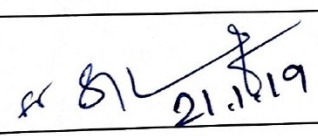

S.No	List of Practical
1	Create Web Page and apply background color, text color, horizontal rules and special characters.
2	Create Web Page and include images with different alignment and wrapped text
3	Create tables and format tables using basic table tags and different attributes.
4	Create a frameset that divides browser window into horizontal and vertical framesets.
5	Create Web Page and apply style rules using CSS.
6	Create Web Page including control structures using JavaScript.
7	Develop and demonstrate the usage of inline and external style sheet using CSS.
8	Write an HTML page including any required JavaScript that takes a number from one text field in the range of 0 to 999 and shows it in a another text field in words. If the number is out of range, it should show “out of range” and if it is not a number, it should show “not a number” message in the result box.
9	Write an HTML page that has one input, which can take multi-line text and a submit button. Once the user clicks the submit button, it should show the number of characters, words and lines in the text entered using an alert message. Words are separated with a white space and lines are separated with new line character.
10	Write an HTML page that contains a selection box with a list of 5 countries. When the

	user selects a country, its capital should be printed next to the list. Add CSS to customize the properties of the font of the capital (color, bold and font size).
11	Write a java script to validate the following fields in a registration page 1. Name (should contains alphabets and the length should not be less than 6 characters) 2. Password (should not be less than 6 characters) 3. E-mail(should not contain invalid addresses)
12	Design a web page using CSS which includes the following: 1) Use different font styles 2) Set background image for both the page and single elements on page. 3) Control the repetition of image with background-repeat property 4) Define style for links as a:link, a:active, a:hover, a:visited 5) Add customized cursors for links. 6) Work with layers.
Total: 60 Hours	

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	H	M	H	H	M
CO 3	M	H	H	M	H
CO 4	M	M	H	H	M
CO 5	H	M	H	H	H

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U4ITS503	Skill Based Paper III Visual Programming		
Semester: V	Credits: 3	CIA : 20 Marks	ESE: 55 Marks

Course Objective:

To gain knowledge about Programming with Visual Basic using Oracle

Course Outcomes (CO):

CO1	Understand the fundamentals of Visual Basic
CO2	Learn about Controls and Events in GUI Environment
CO3	Know about different object models for connecting Visual Basic with Oracle
CO4	Learn how to develop an Application by using Visual Basic and Oracle
CO5	Able to develop simple application software using VB

Offered by: Information Technology

Course Content

Instructional Hours / Week: 4

Unit	Description	Text Book	Chapter
I	Introducing Visual Basic: What is VB, Event and Event Procedures, Object oriented Related concepts, VB Program development process, Required Computer Skills, Logical Program organization, Visual Basic program components, VB Environment, Opening an existing VB Project, saving an visual basic project, running an visual basic project Visual Basic Fundaments, Branching and Looping	1	1
			2,3
Instructional Hours			12
II	Visual Control Fundamentals, Menus and Dialog Boxes, Arrays	1	4,5,8
Instructional Hours			12
III	Procedures: Modules and Procedures, Sub Procedures, Event Procedures, Function Procedures	1	7
Instructional Hours			12
IV	Accessing Oracle from Visual Basic: JET Engine, DAO,RDO, ODBC Direct, ADO, Comparison Data object models DAO: DAO Object Hierarchy, Accessing a DBASE, Creating Recordset, Executing SQL Commands, Putting it all together.	2	12
			14
Instructional Hours			12
V	ODBC Direct: ODBC Direct Hierarchy, Accessing ODBC Direct, Creating Recordsets, Using Query Defs	2	15

ADO:ADO object model, connecting to oracle, working with recordset,	2	16
Instructional Hours		12
Total Hours		60

Text Books:

1. Byron S. Gottfried, **Programming with Visual Basic**, Outline Series, TMH
2. N.Snowden, **Oracle Programming with Visual Basic**, John Wiley and Sons

Reference Books:

1. Gary Cornell, **Visual Basic 6 from Ground up**, Tata McGraw Hill, 1999
2. Content Development Group, **Visual Basic 6.0 Programming**, TMH, 8th reprint, 2007.
3. Mohammed Azam, **Programming with Visual Basic 6.0**, Vikas Publishing House, Fourth Reprint, 2006.

Reference Book:

MSDN Visual studio Library <https://docs.microsoft.com/en-us/dotnet/visual-basic>

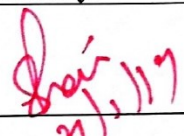
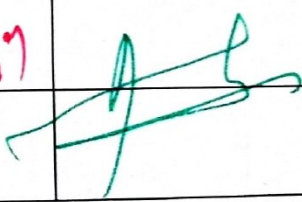
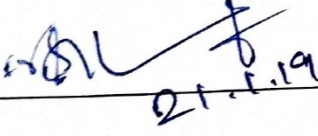
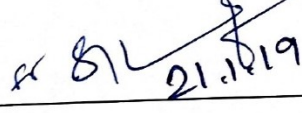

Tools for Assessment (20 Marks)

CIA I	CIA II	CIA III	Assignment	Seminar	Attendance	Total
4	4	5	2	2	3	20

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	H	M
CO 2	H	M	M	H	H
CO 3	H	H	M	H	H
CO 4	M	H	H	M	H
CO 5	H	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
			

21 JAN 2019

Course Code	Title		
18U3ITV510	Core Paper XVII In-Plant Training		
Semester: V	Credits: 2	CIA : - Marks	ESE: 50 Marks

Course Objective:

To give optimum exposure on the practical side of industrial society

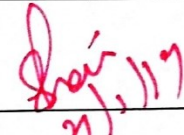
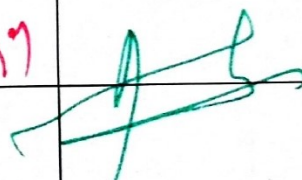
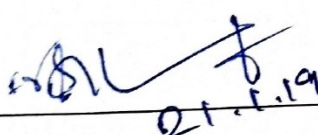
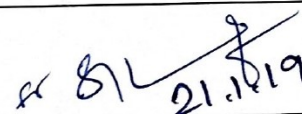

Guidelines:

1. Duration of the internship training is **20 days** during the summer vacation which falls at the **end of the 4th semester.**
2. The departments concerned will prepare on exhaustive panel of institutions, industries and practitioners.
3. The individual student has to identify the institution / industry / practitioners of their choice and inform the same to the HOD / staff-in-charge.
4. The students hereafter will be called as trainees should maintain a work diary in which the daily work done should be entered and the same should be attested by the section in-charge.
5. The departments should prepare an outline of the job to be done, sections in which they have to be attached both in the office as well as in the field.
6. The trainees should strictly adhere to the rules and regulations and office timings of the institutions to which they are attached.
7. The trainees have to obtain a certificate on successful completion of the internship from the chief executive of the organization.
8. Monitoring and inspection by staff on a regular basis.
9. Report writing manual and format should be prepared by the respective departments.
10. All model forms are to be attached wherever it is necessary.
11. Report evaluation: External viva-voce examination will be conducted and the maximum mark awarded is 50.
12. In-Plant Training has to be carried out only in the approved industries by the department/College
13. Report should be submitted in the 5th semester at end of the September

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	H	M
CO 2	H	M	M	H	H
CO 3	H	H	M	H	H
CO 4	M	H	H	M	H
CO 5	H	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3CKC611	Core Paper XVIII Data Mining		
Semester: VI	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To enable the students to the know the fundamental concept basic data mining rules and techniques to apply the real life research problems

Course Outcomes (CO):

CO1	To know basic concept of Data Mining and its Association Rules
CO2	To understand the different types of Clustering
CO3	To apply the learnt method in splitting the data and creating Decision Tree
CO4	To analyse various type of Mining like Web Mining and Text Mining
CO5	To gather knowledge of What, When and Where the data applied

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	Introduction and Association Rules :- Introduction- What is Data mining – Data mining Definition – KDD Vs Data mining – DBMS Vs Data mining – Data mining Techniques – Data mining Application Areas. Association Rules- What is Association Rules - Methods to Discover Association rules – A Priori Algorithm – Partition Algorithm – Pincer Search Algorithm.	1	3, 4
Instructional Hours 18			
II	Clustering Techniques :- Introduction - Clustering Paradigms – Partitioning Paradigm – k Medoid Algorithm – CLARA – CLARANS – Hierarchical Clustering – DBSCAN – BIRCH – CURE .	1	5
Instructional Hours 18			
III	Decision Tree – What is Decision Tree – Tree Construction Principle – Best Split – Splitting Criteria – Decision Tree Construction – CART – ID3 – CHAID – Decision Tree Construction with Presorting	1	6
Instructional Hours 18			
IV	Web Mining – Web Content Mining – Web Structure Mining – Web Usage Mining . Text Mining – Unstructured Text - Episode Rule Discovery for Texts – Hierarchy of Categories – Text Clustering.	1	8
Instructional Hours 18			

V	Temporal and Spatial Data Mining- What is Temporal Data Mining – Temporal Association Rule – Sequence Mining – GSP Algorithm.	1	9
	Spatial Mining – Spatial Mining Tasks – Spatial Clustering – Spatial Trends		
		Instructional Hours 18	
		Total Hours 90	

Text Book(s):

1. Arun K Purari ,**Data Mining Techniques**, University Press India Publications.

Reference Book(s):

1. Soman, Diwakar and Ajay, **Insight into Data Mining Theory and Practice**, Prentice Hall of India Publications.

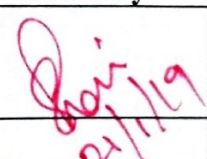
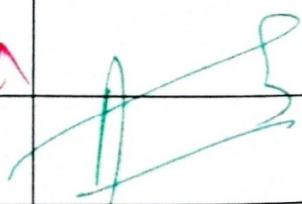
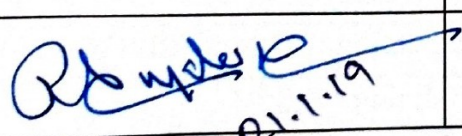
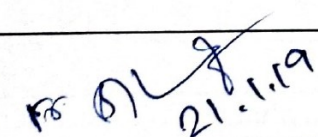
Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	M	H	M
CO 2	H	M	M	H	H
CO 3	M	H	H	M	M
CO 4	H	H	H	H	H
CO 5	H	H	H	M	H

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
R. Annamalai Saravanan	P.K. Manoj Kumar		
 21.1.19	 21.1.19	Dean Academics 21/1/19	

21 JAN 2019

Course Code	Title		
18U3ITV608	Core Paper XIX Project & Viva-Voce		
Semester: VI	Credits: 4	CIA : - Marks	ESE: 100 Marks

Course Objective:

The objective of the project work is to acquire practical knowledge on the implementation of the programming concepts studied.

Course Content

Instructional Hours / Week: 6

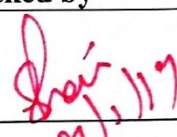
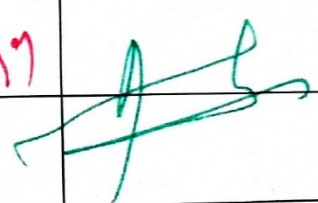
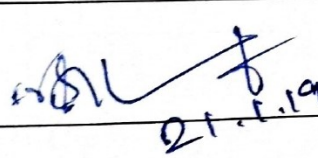
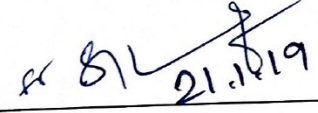

Guidelines for Project Work	
Viva Voce	
Viva-Voce will be conducted at the end of the year by both Internal (Respective Guides) and External Examiners, after duly verifying the Annexure Report available in the College, for a total of 100 marks at the last day of the practical session.	
Out of 100 marks, 60 marks for project report and 40 marks for Viva Voce.	
PROJECT WORK TITLE OF THE DISSERTATION	
Bonafide Work Done by STUDENT NAME REG. NO.	
Dissertation submitted in partial fulfillment of the requirements for the award of <Name of the Degree> of Bharathiar University, Coimbatore-46.	
GUIDE	HOD
College emblem	
Submitted for the Viva-Voce Examination held on _____	
Internal Examiner	External Examiner
Dean	Principal
Counter Signature	
MONTH – YEAR	
CONTENTS	
ACKNOWLEDGEMENT	
CONTENTS	
SYNOPSIS	
1. INTRODUCTION	
1.1 ORGANIZATION PROFILE	
1.2 SYSTEM SPECIFICATION	
1.2.1 HARDWARE CONFIGURATION	

<p>1.2.2 SOFTWARE SPECIFICATION</p> <p>2. SYSTEM STUDY</p> <p> 2.1 EXISTING SYSTEM</p> <p> 2.1.1 DRAWBACKS</p> <p> 2.2 PROPOSED SYSTEM</p> <p> 2.2.1 FEATURES</p> <p>3. SYSTEM DESIGN AND DEVELOPMENT</p> <p> 3.1 FILE DESIGN</p> <p> 3.2 INPUT DESIGN</p> <p> 3.3 OUTPUT DESIGN</p> <p> 3.4 DATABASE DESIGN</p> <p> 3.5 SYSTEM DEVELOPMENT</p> <p> 3.5.1 DESCRIPTION OF MODULES (Detailed explanation about the project work)</p> <p>4. TESTING AND IMPLEMENTATION</p> <p>5. CONCLUSION</p> <p>BIBLIOGRAPHY</p> <p>APPENDICES</p> <p>A. DATA FLOW DIAGRAM</p> <p>B. TABLE STRUCTURE</p> <p>C. SAMPLE CODING</p> <p>D. SAMPLE INPUT</p> <p>E. SAMPLE OUTPUT</p>	<p>Total Hours 90</p>
---	-----------------------------------

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	H	M
CO 2	H	M	M	H	H
CO 3	H	H	M	H	H
CO 4	M	H	H	M	H
CO 5	H	H	H	H	M

H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19	 Dean Academics	

21 JAN 2019

Course Code	Title		
18U3ITZ604	Skill Based Paper IV Practical in Python Programming		
Semester: VI	Credits: 3	CIA : 30 Marks	ESE: 45 Marks

Course Objective:

- The Python course shows you how to use the free open-source to write basic programs and high level applications using concepts.
- This course will be of great interest to all learners who would like to gain a thorough knowledge and understanding of the basic components of computer programming using the Python language

Course Outcomes (CO):

CO1	To develop proficiency in creating based applications using the Python programming Language.
CO2	To be able to understand the various data structures available in Python programming language and apply them in solving problems.
CO3	To be able to do testing and debugging of code written in Python.
CO4	Analyze the different types of logics in python
CO5	Able to create a software by using python

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

S.NO	List of Practical
1.	Write python program to print Hello World
2.	Write python program to Good Morning using string variable
3.	Write python program to store data in list and then try to print them
4.	Write python program to store data in list and then try to print them.
5.	Write python program to print list of numbers using range and for loop
6.	Write python program to store strings in list and then print them.
7.	Write python program to let user enter some data in string and then verify data and print
8.	Write python program in which an function is defined and calling that function prints <i>Python Programming</i>
9.	Write python program in which a function (with single string parameter) is defined and calling that function prints the string parameters given to function.
10	Write python program in which a class is define, then create object of that class and call simple print function define in class.
Total Hours 90	

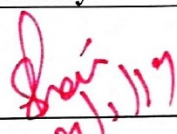
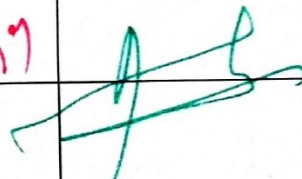
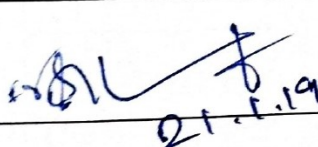
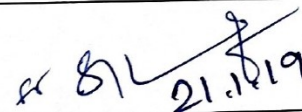

Tools for Assessment (25 Marks)

Program Creativity	Program Execution	Test1	Test 2	Observation Note Book	Attendance	Total
5	5	5	5	7	3	30

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	H	M
CO 2	H	H	H	H	M
CO 3	H	H	M	H	H
CO 4	H	M	H	H	M
CO 5	H	H	M	H	H

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

ELECTIVE

Course Code	Title		
18U3CKE501	Elective Paper I - E-commerce		
Semester: V	Credit: 4	CIA : 25 Marks	ESE : 75 Marks

Course Objective:

On Successful Completion of this subject the students should have: - knowledge in E-Commerce, E-Market, EDI , Business Strategies etc.,

Course Outcomes (CO):

CO1	Understand the concepts of E-Commerce
CO2	Explain to students why information systems are so important today for business and management
CO3	Evaluate the role of the major types of information systems in a business environment and their relationship to each other
CO4	Identify the major management challenges to building and using the Internet
CO5	Applications of e-Commerce

Offered by: CS/CA/IT/CT

Course Content

Instructional Hours/Week: 6

Unit	Description	Text Book	Chapter
I	Introduction to E-Commerce : The Scope of E-Commerce – Definition-E-Commerce & the Trade Cycle – Electronic Market – Electronic Data Interchange – The Internet Commerce – The E-Commerce in Perspective. Business Strategy : The Value Chain – Supply Chains – Porter’s Value Chain Model – The Inter Organizational Value Chain.	1	1&2
Instructional Hours			18
II	The Introduction to Business Strategy – Strategic Implications of IT – Technology – Business Environment – Business Capability – Existing Business Strategy – Strategy Formulation & Implementation Planning – e-Commerce Implementation - Commerce Evaluation. The Inter Organizational Transactions – The Credit Transaction Trade Cycle. A Variety of Transactions – Pens & Things.	1	4&6
Instructional Hours			18
III	E-Markets : Markets – E-Markets-Usage of E-Markets-Advantages & Disadvantages of E-Markets . EDI : Introduction – Definition - Benefits of EDI – EDI Standards – EDI Communication EDI Implementation – EDI Agreement – EDI Security.	1	7,8&9
Instructional Hours			18

IV	The Internet : The Internet – The Development of the Internet – TCP/IP – Internet Components – Uses of the Internet – A Page on the Web : HTML Basics – Introduction to HTML – Further HTML – Client Side Scripting – Server Side Scripting – HTML Editors & Editing – The Elements of E-Commerce : Elements – e-Visibility – The e-Shop – On line Payments - Delivering the Goods – Internet e-Commerce Security.	1	13,14&15
Instructional Hours			18
V	E-Business : Introduction - The Internet Bookshops – Grocery Supplies - Software Supplies and Support – Electronic Newspapers – The Internet Banking - The Virtual Auctions – Online Share Dealing – Gambling on the Net – e-Diversity.	1	16
Instructional Hours			18
Total Hours			90

Text Book :

1. David Whiteley, **E-Commerce – Strategy, Technology & Applications**, Tata McGraw-Hill.

Reference Book:

1. Jeffrey F. Rayport, Bernard J. Jaworski, **Introduction to E-Commerce**, 2nd Edition TMH.

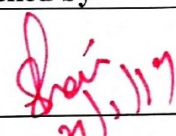

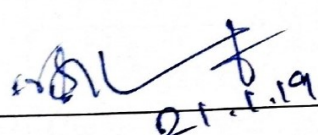
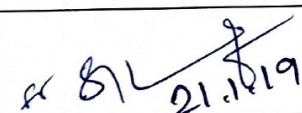

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	H	H
CO 3	H	H	M	H	H
CO 4	H	H	H	M	H
CO 5	H	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3CKE502	Elective Paper I –Compiler Design		
Semester: V	Credit: 4	CIA : 25 Marks	ESE : 75 Marks

Course Objective:

- On Successful Completion of this subject the students can understand the major concept areas of language translation and compiler design and enrich the knowledge of modern compiler & its features.

Course Outcome:

CO1	Apply the knowledge of lex tool &yacc tool to devleop a scanner & parser.
CO2	Design & conduct experiments for Intermediate Code Generation in compiler.
CO3	Knowledge of patterns, tokens & regular expressions for solving a problem in the field of data mining.
CO4	Knowledge in various phases of compiler ant its use, code optimization techniques, machine code generation, and use of symbol table.
CO5	Knowledge in code generation

Offered by:CS/CA/IT/CT

Course Content

Instructional Hours/Week: 6

Unit	Description	Text Book	Chapter
I	Introduction : Language Processor – Structure of a Compiler – Evolution of programming Language – Application of Compiler Technology – Programming Language basics	1	1
Instructional Hours			18
II	A Simple Syntax – Directed Translator: Introduction – Syntax definition – Syntax directed Translation – Parsing – Lexical Analysis -Symbol Table.	1	2
Instructional Hours			18
III	Lexical Analysis: The role of lexical analyzer- Input Buffering – Specification of tokens – Recognition of token – the lexical analyzer generator Lex – Finite Automata – From Regular Expression to Automata	1	3
Instructional Hours			18
IV	Syntax Analysis: Introduction – Context free grammer – top down parsing – bottom up parsing – Introduction to LR Parsing – Simple LR Intermediate Code Generation: Variant of syntax trees – Three address code – type Checking – ontrol flow – intermediate code for procedure	1	4,6

		Instructional Hours	18
V	Code Generation: Issues in the Design of a code generator – Target Language – Addresses in the Target Code – Basic block and flow graph – optimization of basic block – A simple code generator	1	8
		Instructional Hours	18
		Total Hours	90

Text Book :

1. Alfred V.Aho, Monica S Lam, **Compilers: Principles, Techniques, & Tools**, 2nd Edition, Pearson Education, 2009

Reference Books:

1. A.A.Puntambekar, **Compiler Design**, 1st Edition, Technical Publication, Pune, 2009.
2. V. Raghavan, **Principles Of Compiler Design**, Tata McGraw-Hill Education, 2010

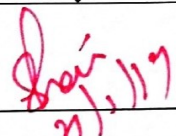
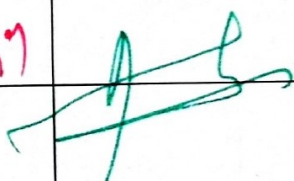
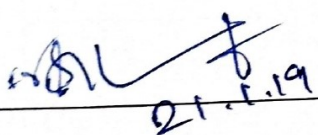
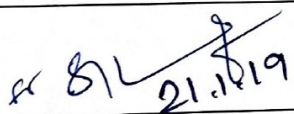

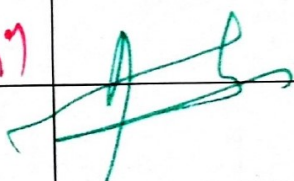
Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	S	H	S
CO 3	H	H	M	H	H
CO 4	S	H	H	M	H
CO 5	H	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3CKE 503	Elective Paper I - Internet of Things		
Semester: V	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

To understand the Data and Knowledge Management and use of Devices in IoT Technology, Understand State of the Art – IoT Architecture and Real World IoT Design.

Course Outcome: At the end of the course the student will be able to:

CO1	Understand the vision of IoT from a global context.
CO2	Determine the Market perspective of IoT.
CO3	Use of Devices, Gateways and Data Management in IoT.
CO4	Building state of the art architecture in IoT.
CO5	Application of IoT in Industrial and Commercial Building Automation and Real World Design Constraints.

Offered by: CS/CA/IT/CT

Course Content**Instructional Hours / Week: 6**

Unit	Description	Text Book	Chapter
I	M2M to IoT-The Vision-Introduction, From M2M to IoT, M2M towards IoT-the global context, A use case example, Differing Characteristics.	1	2
Instructional Hours			18
II	M2M to IoT – A Market Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.	1	3-4
Instructional Hours			18
III	M2M and IoT Technology Fundamentals- Devices and gateways, Local and wide area networking, Data management.	1	5
Instructional Hours			18
IV	Business processes in IoT, Everything as a Service(XaaS), M2M and IoT Analytics, Knowledge Management	1	5
Instructional Hours			18
V	IoT Architecture-State of the Art – Introduction, State of the art	1	6-7

Architecture Reference Model- Introduction, Reference Model and architecture, IoT reference Model	
Instructional Hours	18
Total Hours	90

Textbook:

1. Jan Holler, VlasiosTsiatsis, Catherine Mulligan, Stefan Avesand, StamatisKarnouskos, David Boyle, **From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence**, Academic Press, 2014.
2. https://www.tutorialspoint.com/internet_of_things/index.htm

Reference Books:

1. Vijay Madiseti and ArshdeepBahga, **Internet of Things (A Hands-on-Approach)**, VPT, 2014.
2. Francis daCosta, **Rethinking the Internet of Things: A Scalable Approach to Connecting Everything**, Apress Publications, 2013

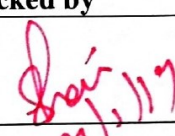
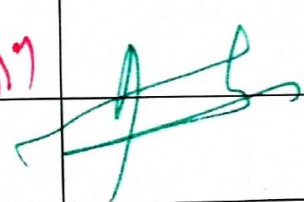
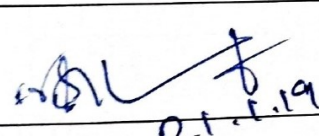


Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	H	H
CO 3	H	H	M	H	H
CO 4	S	H	H	M	H
CO 5	H	H	S	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3CKE504	Elective Paper I - Big Data Analytics		
Semester: V	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

To provide an overview of an exciting growing field of big data analytics, analyse big data like Hadoop, NoSql Map-Reduce and learn fundamental techniques and principles in achieving big data analytics

Course Outcome:

CO1	Know about the big data analytics
CO2	Tools in big data analytics
CO3	Data model in big data analytics
CO4	Know about algorithms
CO5	Applications of big data analytics

Offered by: CS/CA/IT/CT

Course Content

Instructional Hours/Week: 6

Unit	Description	Text Book	Chapter
I	INTRODUCTION TO BIG: Introduction to Big Data, Big Data characteristics, types of Big Data, Traditional vs. Big Data business approach, Case Study of Big Data Solutions.	1	1
Instructional Hours			18
II	HADOOP: Data format – analysing data with Hadoop – scaling out – Hadoop streaming – Hadoop pipes – design of Hadoop distributed file system (HDFS) – HDFS concepts – Java interface – data flow– Hadoop I/O – data integrity – compression – serialization – Avro – file-based data structures	2	1& 2
Instructional Hours			18
III	NoSQL DATA MODEL: Introduction to NoSQL – aggregate data models – aggregates – key-value and document data models – relationships – Graph databases - schema less databases – distribution models – master-slave replication – peer-peer replication – sharing and replication	3	
Instructional Hours			18
IV	MAP REDUCE APPLICATIONS: MapReduce workflows – Unit Tests with MRUnit – Test Data and Local Tests – Anatomy of MapReduce job run – Failures – Job scheduling – Task execution – MapReduce types – Input formats – Output formats.	1	2
Instructional Hours			18
V	RECOMMENDATION: MapReduce – A Model for Recommendation Systems, Content-Based Recommendations,	1	9

Collaborative Filtering. Mining Social-Network Graphs: Social Networks as Graphs, Clustering of Social-Network Graphs, Direct Discovery of Communities, SimRank, Counting triangles using Map-Reduce	
Instructional Hours	18
Total Hours	90

Text Books:

1. AnandRajaraman and Jeff Ullman, **Mining of Massive Datasets**, Cambridge University Press, 2015
2. Alex Holmes, **Hadoop in Practice**, Manning Press, Dreamtech Press, 2015.
3. Dan McCreary and Ann Kelly, **Making Sense of NoSQL – A guide for managers and the rest of us**, Manning Press, 2014.

Reference Books:

1. Michael Minelli, Michelle Chambers, and AmbigaDhiraj, **Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses**, Wiley, 2013
2. Bill Franks, Taming, **The Big Data Tidal Wave: Finding Opportunities In Huge Data Streams With Advanced Analytics**, Wiley

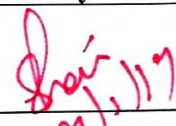
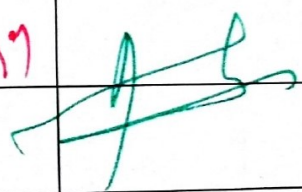
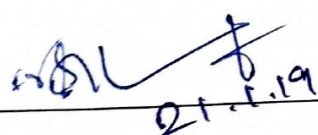
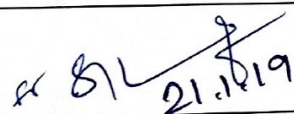

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3CKE605	Elective Paper II - Software Agent		
Semester: VI	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

- To classify the various Software agent design
- To appreciate agent communication and collaboration
- To build an architecture and a suitable design
- To understand Mobile agents

Course Outcome:

CO1	Remember the characteristics of an intelligent agent and how an agent differs from an object
CO2	Understanding Agent architectures at Micro and Macro level
CO3	Apply to Develop agent understanding with different kinds of Ontologies and how they work together
CO4	Analyze different types of agent architecture
CO5	Able to become a software agent

Offered by: CS/CA/IT/CT

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	AGENT AND USER EXPERIENCE Interacting with Agents - Agent From Direct Manipulation to Delegation - Interface Agent Metaphor with Character - Designing Agents - Direct Manipulation versus Agent Path to Predictable	1	1
	Instructional Hours		18
II	AGENTS FOR LEARNING IN INTELLIGENT ASSISTANCE Agents for Information Sharing and Coordination - Agents that Reduce Work Information Overhead - Agents without Programming Language - Life like Computer character - S/W Agents for cooperative Learning - Architecture of Intelligent Agents	1	2
	Instructional Hours		18
III	AGENT COMMUNICATION AND COLLABORATION Overview of Agent Oriented Programming - Agent Communication Language - Agent Based Framework of Interoperability	1	3
	Instructional Hours		18
IV	AGENT ARCHITECTURE Agents for Information Gathering - Open Agent Architecture - Communicative Action for Artificial Agent	1	4
	Instructional Hours		18

V	MOBILE AGENTS	2
	Mobile Agent Paradigm - Mobile Agent Concepts -Mobile Agent Technology - Case Study: Tele Script, Agent Tel	
	Instructional Hours	18
		Total Hours 90

TEXT BOOK(S)

1. Jeffrey M. Bradshaw, **Software Agents**, MIT Press, 2000. Unit (I – IV)
2. William R. Cockayne, Michael Zyda, **Mobile Agents**, Prentice Hall. Unit, 1998

REFERENCE BOOK(S)

1. Russel & Norvig, “**Artificial Intelligence: A Modern Approach**”, Prentice Hall, 2nd Edition, 2002.
2. Joseph P. Bigus & Jennifer Bigus, **Constructing Intelligent agents with Java: A Programmer's Guide to Smarter Applications**, Wiley, 1997.

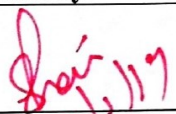

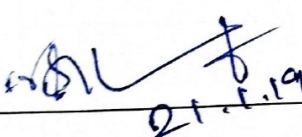
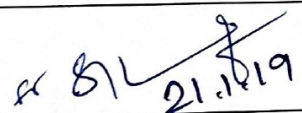

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3CKE606	Elective Paper II - Information Security		
Semester: VI	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

Enable the students to understand basic concepts of different Information Security concepts

Course Outcomes:

CO1	Remember the basic terms in Information Security.
CO2	Understand the basics of information security.
CO3	To gain knowledge about Physical Operations, network and software development security.
CO4	Analyze different laws and Ethics.
CO5	Evaluate the principles of security.

Offered by: CS/CA/IT/CT

Course Content

Instructional Hours/Week: 6

Unit	Description	Text Book	Chapter
I	Why Study Information Security?	1	1,2
	Information Security Principles of Success		
Instructional Hours			18
II	Certification Programs and the Common Body of Knowledge	1	3,4
	Governance and Risk Management		
Instructional Hours			18
III	Security Architecture and Design	1	5,6
	Business Continuity Planning and Disaster Recovery Planning		
Instructional Hours			18
IV	Law, Investigations, and Ethics	1	7,8,9,10
	Physical Security Control		
	Operations Security		
	Access Control Systems and Methodology		
Instructional Hours			18
V	Cryptography	1	11,12,13
	Telecommunications, Network, and Internet Security		14

Software Development Security Securing the Future	Instructional Hours	18
	Total Hours	90

Text Book(s):

1. Mark Merkow (2006), **Information Security, 1/e: Principles and Practices** Pearson Education.

Reference Book(s) :

1. Nina Godbole (2009), **“Information Systems Security”**, Wiley Publications.

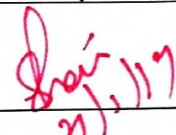
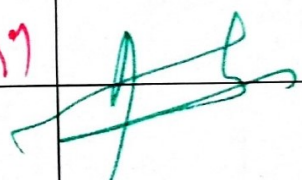
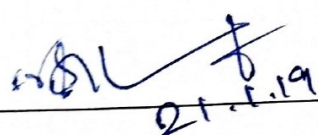
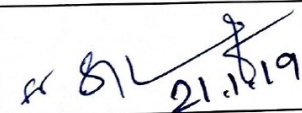

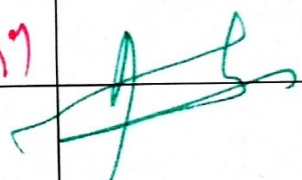
Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19	 Dean Academics	

21 JAN 2019

Course Code	Title		
18U3CKE607	Elective Paper II - Cloud Computing		
Semester: VI	Credits: 4	Semester: VI	Credits: 4

Course Objective:

Provide the students with the fundamental knowledge, understanding, and skills required for designing and building applications to exploit cloud computing paradigm.

Course Outcome:

CO1	Remember the key dimensions of the challenge of Cloud Computing
CO2	Understand the Develop and deploy cloud application using popular cloud platforms.
CO3	Design and develop highly scalable cloud-based applications by creating and configuring virtual machines on the cloud and building private cloud.
CO4	Analyze different types of services in cloud computing
CO5	Make recommendations on cloud computing solutions for an enterprise.

Offered by: CS/CA/IT/CT

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	Introduction		1
	Defining cloud computing –Cloud types –Characteristic of computing– Open standards	1	3
	Exploring the cloud computing Stack-Connecting to the cloud – Understanding services and applications by type.		4
	Instructional Hours		18
II	Understanding Abstraction and Virtualization		5
	Using virtualization technique – Load balancing- Understanding hypervisors –Machine imaging- Porting applications	1	6
	Capacity planning – Baseline and metrics – Network capacity – Scaling		7
	Exploring platform as service.(7)		
Instructional Hours		18	
III	Cloud Computing Web Services		8
	Google Web service – Surveying the Google application portfolio – Google toolkit		9
	Amazon web services–Components and services– EC2- Storage systems– Database services	1	9
	Microsoft cloud services – Windows azure platform – Windows live.	2	10
	Instructional Hours		18
IV	Cloud Infrastructure		
Managing the cloud – Administrating the cloud–Management	1	11	

products			
Communicating with the cloud –Instant messaging –			18
Collaboration technologies–Social networks.			19
Media and streaming.			
Instructional Hours			18
Cloud Applications and Mobile Cloud			
V Working with mobile devices – Smartphone with the cloud.		1	20
Mobile web services-Scientific applications –Business and consumer applications.		2	10
Instructional Hours			18
Total Hours			90

Text Books:

1. Barrie Sosinsky, **Cloud Computing Bible**, Wiley Publishing, Inc.,2011
2. RajkumarBuyya, Christian Vecchiola and ThamariSelviS ,**Mastering in Cloud Computing**, McGraw Hill Education (India) Private Limited, 2013

Reference Books:

1. Michael Miller,**Cloud Computing**, Pearson Education, New Delhi, 2012
2. Anthony T Velte, **Cloud Computing: A practical Approach**, Tata McGraw Hill, 2010
3. Fern Halper, Marcia Kaufman, Bloor Robin and Judith Hurwit, **Cloud Computing for Dummies**, Wiley, India, 2009.

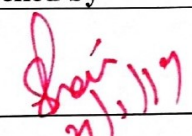
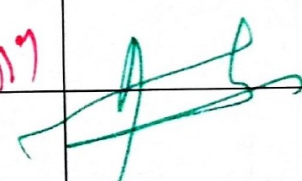
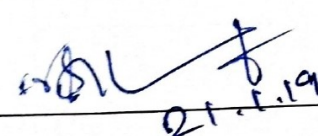
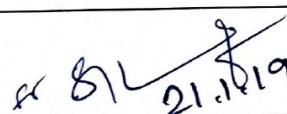

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
			

21 JAN 2019

Course Code	Title		
18U3CKE608	Elective Paper II - Cyber Security		
Semester: VI	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

On successful completion of the course the students should have: Understood the Information security concepts

Course Outcome:

CO1	Remember the hardware, software, components of a network and the interrelations.
CO2	Understand the concept of multiple operating systems, systems software, network services and security. Evaluate and compare systems software and emerging
CO3	Explain networking protocols and their hierarchical relationship hardware and software. Compare protocol models and select appropriate protocols for a
CO4	Develop solutions for networking and security problems, balancing business concerns, technical issues and security.
CO5	Able to product system against threat.

Offered by: CS/CA/IT/CT

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	Information and its Representation - What is information – Quality of Information – Value of Information – Information Processing – Information Processing cycle in computers – information Representation and codes – Number Representation – Binary Representation of positive Integers– signed Binary Integers – Positive Binary Fractions – signed Binary Fractions – Representing Fractions in Binary – Representation of Alphanumeric Data – Current Trends in Information Technology – semiconductor Technology – Information storage – Networking – Applications of IT – IT Applications in Business – Modeling and simulation.	1	1
Instructional Hours			18
II	Computer Networks and Internet – An overview - What is computer Network – Basic networking components – what is Internet – Internet Protocols – Internet protocol types – OSIReference versus TCP/IP Model – OSI model layers – TCP/IP Model layers-TCP/IP Layers – The TCP/IP Model – Internet Protocol (IP) – Internet Protocol version 4 (IPV4) – Internet Protocol version 6 (IPV6).	1	2
Instructional Hours			18
III	Information storage and communication - Information storage – purpose of storage - Types of storage Devices – File organization – Internal file structure – External file structure and file extension – Data communication – an overview –what is data communication –	1	3

signals – BasicData communication Model – Modulation Techniques.			
Instructional Hours			18
IV	Information security Framework –Information security and privacy – security Framework –Information systems security Framework – Framework for Network security .Access controlTechniques –		
	Computer Security and Access control – Access control Techniques – BiometricAuthentication – Authentication Token – Token types and usage – Digital signature –Embodiments and vendors – Related Authentication Technologies.	1	8
Instructional Hours			18
V	Cyber Law and Ethics – Introduction to cybercrime – Prevention – preventive steps forIndividuals – preventive steps for organizations and government – How to protect the computer against threats.		
		1	6
Instructional Hours			18
Total Hours			90

Text Book(s):

1. Pankaj Agarwal, Information Security & Cyber Laws, Acme Learning Private Limited, First Edition, 2010

Reference Book(s):

1. Amy Rose, Deborah Arrand, Kristin E.Ohlim, Malloy, Michael G.Solomon, Mike Chapple, “Information Security Illuminated”, Jones &Barlett Publishers, 2005.

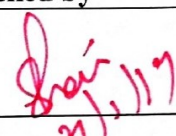

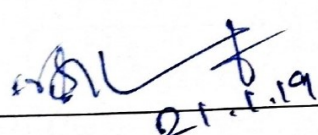
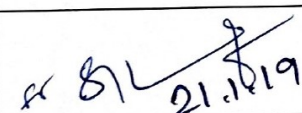

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
			

21 JAN 2019

Course Code	Title		
18U3ITE609	Elective Paper III - Digital Marketing		
Semester: VI	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

- To identify core concepts of marketing and the role of marketing in business and society.
- To acquire Knowledge of social, legal, ethical and technological forces on marketing decision-making.
- Appreciation for the global nature of marketing and appropriate measures to operate effectively in international settings.

Course Outcome:

CO1	Ability to develop marketing strategies based on product, price, place and promotion objectives.
CO2	Ability to create an integrated marketing communications plan which includes promotional strategies and measures of effectiveness.
CO3	Ability to communicate the unique marketing mixes and selling propositions for specific product offerings.
CO4	Ability to construct written sales plans and a professional interactive oral sales presentation.
CO5	Ability to formulate marketing strategies that incorporate psychological and sociological factors which influence consumers.

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	Introduction to think – Digital Marketing Strategy – Introduction – Key terms and Concepts – What is Marketing – What is Digital Marketing - Understanding Marketing Strategy – The Building Blocks of Marketing Strategy – Crafting a Digital Marketing Strategy – Case Study	1	2
Instructional Hours			18
II	Market Research – Introduction – Key terms and Concepts – the Importance of Market Research – Key Concepts in Market Research – Online Research Methodologies – Justifying the Cost of Research – tools for the trade – Advantages and Challenges -	1	3
Instructional Hours			18
III	Content Marketing Strategy – Introduction – Key Terms and Concepts – Defining Content Marketing – Startegic Building Blocks – Content Creation – Content Channel Distribution – Tools for the Trade – Advantages and Challenges	1	
Instructional Hours			18

IV	User Experience Design – Introduction – Key Terms and Concepts – Understanding UX design – Core principles of UX design – Mobile UX – Step –by-step guide to UX design – Tools of the trade – Case Study	1
Instructional Hours		18
V	Web development and Design – Introduction – Key terms and concepts – Web design – Web Development – Mobile Development – Step-by-step guide to building a website – Case study	1
Instructional Hours		18
Total Hours		90

Text Book(s):

1. Rob Stokes, "eMarketing the Essential guide to marketing in a digital world", 5th Edition, 2017.

Reference Book(s) :

Online Reference Book:

<https://ondigitalmarketing.com/learn/odm/>

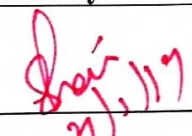

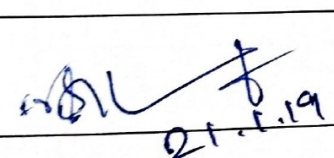
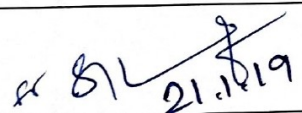


Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3ITE610	Elective Paper III - Applied Cryptography		
Semester: VI	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

To learn the objectives, need and mechanisms for providing security to information in storage and in transmission.

Course Outcome:

CO1	Understands Cryptography importance in information security
CO2	Classify the Symmetric and Asymmetric Cryptographic Algorithms
CO3	Learn the mechanism of Key Distribution
CO4	Know the Hash function usage in Message Authentication and Digital Signature in User Authentication
CO5	Able to apply Cryptographic concept and techniques in various fields.

Offered by: Information Technology

Course Content

Instructional Hours/Week: 6

Unit	Description	Text Book	Chapter
I	WHAT IS SECURITY: Key information security concepts, Critical Characteristics of Information, CNSS Security Model, Components of Information Systems, Balancing information security and access, Approaches to information security implementation, Security system Development life cycle, Security Professionals and the organization	1	1
	Need for security, Introduction, Business need first, Threats, Attacks, Secure SoftwareDevelopment.	1	2
Instructional Hours			18
II	CRYPTOGRAPHIC CONCEPTS AND TECHNIQUES: Symmetric Cipher Model- Substitution Techniques- Transposition Techniques- Rotor Machines- Steganography.	2	2
Instructional Hours			18
III	SYMMETRIC KEY ALGORITHM: Stream Cipher-RC4 Block Cipher-Block Cipher Principles	2	7
	DES: Strength of DES- Differential and Linear Cryptanalysis- Block Cipher Design Principles	2	3
	AES: structure, Transformation functions, Key expansion	2	5
Instructional Hours			18
IV	ASYMMETRIC KEY ALGORITHM: Public key Cryptography – RSA.Other Public key Cryptosystems- Diffie-Hellman Key exchange-ElGamel Cryptographic System-Elliptic Curve	2	9,10

Cryptography.			
Instructional Hours			18
V	CRYPTOGRAPHIC HASH FUNCTIONS -Applications of hash functions, Two simple hash functions, SHA,SHA-3 MAC-Requirement and functions.	2	11 – 14
	Digital Signature - Properties, Digital Signature Standard		
	Key Management and Distribution - Symmetric key Distribution using symmetric encryption- Symmetric key Distribution using asymmetric encryption-Distribution of Public keys		
	User authentication - Kerberos.		
Instructional Hours			18
		Total Hours	90

Text Books:

1. Michael E Whitman and Herbert J Mattord, **Principles of Information Security**, Course Technology, Cengage Learning, 2012, 4th Edition.
2. William Stallings, **Cryptography and Network Security**, Pearson Education, 4th edition, 2015.

Reference Books:

1. AtulKahate, **Cryptography and Network Security**,Tata McGraw Hill, 2013.
2. Mark Stamp, **Information Security, Principles and Practice**, Wiley India, 2015.
3. M.Arthur Conklin, Greg White, **Principles of Information Security**, TMH, 2012.

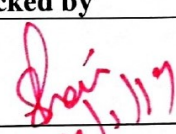
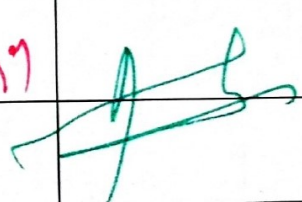
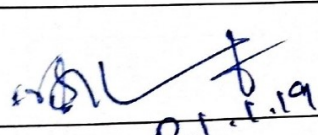
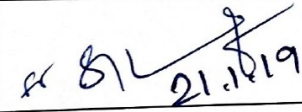

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong: H-High: M-Medium: L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
			

21 JAN 2019

Course Code	Title		
18U3ITE611	Elective Paper III - Bio Informatics		
Semester: VI	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

- Understanding fundamentals of Bioinformatics
- Understanding concepts of Biological Sequences and Usage of Databases on Bioinformatics
- Applying Technologies to analyse molecular modelling and viewing.

Course Outcome:

CO1	Able to understand concepts and principles of bioinformatics systems
CO2	Able to apply software tools to analyse, model molecular structures and sequences for bioinformatics.
CO3	Understand the concept of perl,CORBA
CO4	Analyze different types of syntax and semantic errors
CO5	Able to create application using concept of perl.

Department Offered: Information Technology

Course Content

Instructional Hours/Week: 6

Unit	Description	Text Book	Chapter
I	Introduction – Objectives of Bioinformatics – Kind of data – Multiplicity of data and data mining – Major Bioinformatics databases – Data Integration – Data Analysis – Careers in Bioinformatics – Databases and Tools.	1	1
Instructional Hours			18
II	Information Molecules and Information Flow – Introduction – Basic Components – Structure of DNA – Structure of RNA – Genes – analyzing DNA. Using Linux – Introduction to Linux – Basics of Linux System – Using Linux file system and Directories – Text processing – writing Shell programs.	1	3,5
Instructional Hours			18
III	Programming with Perl – Introduction to Perl – programming in Perl – Arrays – File Input and Output – Perl applications for bioinformatics. Relational and Object oriented Databases – Introduction – Types of Databases – Object oriented Databases – CORBA – Managing Biological Databases – Tools for Sequence alignment.	1	6,7,8,11
Instructional Hours			18
IV	Gene Prediction methods -Introduction – using patterns to Predict genes – methods of Gene prediction – Gene prediction tools – Understanding and using Biological databases. Proteomics – Introduction – Proteome analysis – tools for proteome analysis – metabolic pathways – genetic networks	1	14,18

Instructional Hours		18
Methods of statistical Analysis – Introduction – Fundamentals of Probability and statistics –application of statistical tools.		
V	Problem solving in Bioinformatics – Introduction – Genomic analysis – strategies and Options for similarity search – Practical considerations – Flowchart for protein structure prediction	20,21
Instructional Hours		18
Total Hours		90

Text Book

1. S.C.Rastogi, NamitaMendiratta&ParagRastogi,**Bioinformatics concepts, skills & Applications** , CBS Publications, New Delhi, 2003.

Reference Books:

1. Des Higgins & Willie Taylor I **Bioinformatics sequence Structures and Databases**By Oxford University Press, 2000.
2. Teresa K.Attwood and David J.Parry Smith ,**Introduction to Bioinformatics**, Pearson Education, Singapore, 2005
3. David. W.Mount. **Bioinformatics: sequence & Genome Analysis**, CBS Publications and Distributors, New Delhi,2005

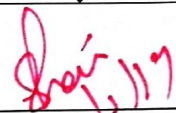
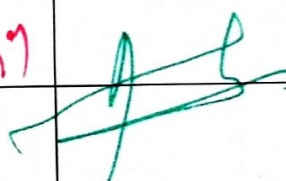
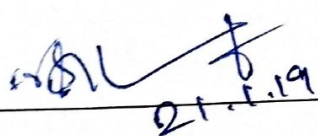
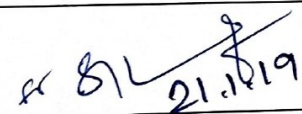

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
 21.1.19	 21.1.19		

21 JAN 2019

Course Code	Title		
18U3ITE612	Elective Paper III - Open Source Software		
Semester: VI	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

To understand the fundamental knowledge in Open source software and PHP programming

Course Outcome:

CO1	Fundamental Knowledge in Open source software
CO2	Describe and use the features and syntax of programming language PHP
CO3	To develop applications in PHP using various concepts like arrays, Functions, etc
CO4	To be able to retrieve and display data from mySQL database tables using PHP
CO5	To be able to use PHP to connect to mySQL databases and perform basic database operations.

Offered by: Information Technology

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
Open source software & Introduction to PHP :			
I	Introduction What Is Free Software and How Does It Relate to Open Source?, What Is Open Source Software? -The Open Source Definition;	1	1,3
	Introduction to PhP: History, PHP Basics: Data types-identifiers-variables-constants-Expressions-String interpolation-control structure.	2	
Instructional Hours			18
II	Functions & Arrays: Invoking a Function-creating a Function – Function Libraries. Arrays : what is an Array-creating an array- Adding element – Traversing Elements – locating Array elements – sorting array – merging, slicing, splitting & Dissecting Arrays – other useful Array Functions.	2	4,5
	Instructional Hours		
Object-oriented PHP & Advanced OOPS Features:			
III	Benefits & OOPS – Key OOP concepts – Constructor & Destructors – static class Members - The instance of keyword – Helper function- Advanced OOPs Features: Advanced OOPs Features Not supported by PHP – object cloning- Inheritance – Interfaces-Abstract classes.	2	6,7
	Instructional Hours		
Error & Exception Handling:			
IV	Exception Handling – Error logging – Strings & Regular	2	8

Expressions: Regular Expressions – other string – specific functions – working with the File & Operating systems: working with files – Executing shell commands.			
Instructional Hours			18
Web Services & Database Connectivity:			
V	Web services: Why web services?-Simple XML – SOAP , Using PHP with MySQL.	2	20
Instructional Hours			18
Total Hours			90

Text Books:

1. Open Sources: Voices from the Open Source Revolution
2. W. Jason Gilmoree, Beginning PHP and MySQL From Novice to Professional, Third Edition, Apress

Reference Books:

1. PHP5 and MYSQL Bible, wiley India Pvt. Ltd, original Language English Edition 2008
2. Steven Holzner, The Complete Reference PHP, TATA McGraw –Hill Edition.

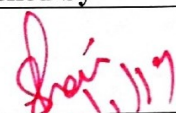

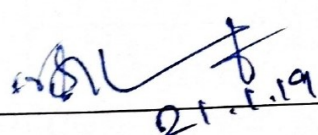
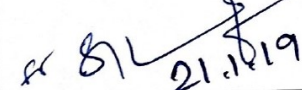


Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
P.K. Manoj Kumar	P.K. Manoj Kumar		
			

21 JAN 2019