CODE	COURSE TITLE
18DCPC101	INTRODUCTION TO INFORMATION TECHNOLOGY

Category	CIA	ESE	L	T	P	Credit
CORE	25	75	55	5	-	4

Preamble

To learn the IT based concepts like hardware, software, programming languages, internet/web and intranet. This is a basic paper of IT to familiarize the students with computer and its applications in the relevant fields and exposes them to some basics and functions of computer and with its utility. A major component of the course is the practical application of the knowledge gained from the theoretical content. The material covers a broad range of introductory Information Technology concepts.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Explain basic knowledge of computer and its internal processing; classify the computer and its applications	K3
CO2	Illustrate the concept of memory types and its usage with data storage facilities	K3
CO3	Classify the computer terminals and its types; make algorithms and flowchart for computer programming languages	K5
CO4	Implement network security features such as cryptography, digital signature and firewall	K3
CO5	Make use of short range wireless communication technologies and also use latest technology used for communication	K4

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	S	S	M	M	M
CO3	M	S	S	M	M
CO4	S	S	S	M	M
CO5	S	S	M	S	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT I   **12 Hrs.**
Computer Basis: Introduction – Evolution of Computers – Generation of Computers – Classification of Computers – Applications of Computers – Computer Organization and Architecture: Introduction – Central Processing Unit–Types of Number System.

UNIT II   **12 Hrs.** Computer Memory and Storage: Introduction – Memory Hierarchy –Random Access Memory (RAM) – Read only Memory (ROM) – RAM, ROM and CPU Interaction – Types of Secondary Storage Devices.

UNIT III   **12 Hrs.** Input Output Media: Introduction – Types of input Devices – Types of Output Devices– Computer Terminals. Computer Programming and Languages: Introduction – Algorithm –Flowchart.

UNIT IV   **12 Hrs.** Computer Security: Introduction – Computer Security: Definitions – Malicious Programs – Cryptography – Digital Signature –Firewall.

UNIT V   **12 Hrs.**
Emerging Trends in IT: Introduction – Electronic Commerce – Electronic Data Interchange (EDI) – Mobile Communication – Bluetooth – Global Positioning System – Smart Card–Infrared Communication–Imminent Technologies.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	ITL ESL	Introduction to Information Technology	Pearson Education, New Delhi	2012, 2ndEdition

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Alexis Leon, Mathews Leon	Fundamentals of Information Technology	Leon Vikas Press, Chennai.	1999, 2ndEdition

Web Resources
1. www.spoken-tutorial.org
2. www.w3schools.com
3. www.nptel.ac.in
4. www.tutorialpoint.com

Pedagogy
Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPC102	DATA STRUCTURES AND C PROGRAMMING

Category	CIA	ESE	L	T	P	Credit
Core II	24	75	70	5	-	4

Preamble

To learn and understand the concept of Data Structures and implement its concepts using C programming language.

Course Outcomes

On the successful completion of the course, Students should able to

CO Number	CO Statement	Knowledge Level
CO1	To understand the problem solving techniques using computer and basic concepts of operators, loop control statements in C programming	K1
CO2	Ability to work with arrays, strings functions and pointers	K2
CO3	Understand the concept of structures and unions in C	K1
CO4	Design linear data structures stacks, queues and linked lists and implement in C	K2
CO5	Design nonlinear data structures like trees, searching and sorting, and implement their operations in C programming	K2

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	M	S	S	M	M
CO2	M	M	M	S	S
CO3	M	S	S	S	M
CO4	M	M	M	S	M
CO5	M	S	S	S	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT – I   **15 Hrs.**

Programming development methodologies – Programming style – **Problem solving techniques:** Algorithm, Flowchart, Pseudo code – Structure of a program – C character set – Delimiters – Keywords – Identifiers – Constants – Variables – Rules for defining variables – Data types – Declaring and initializing variables – Type conversion.

Operators and Expressions – Formatted and Unformatted I/O functions – Decision statements – Loop control statements.

UNIT – II   **15 Hrs.**

Arrays – String and its standard functions – Pointers – Functions.

UNIT – III   **15 Hrs.**

Structure and Union: Features of structure - Declaration and initialization of structure – Structure within structure – Array of structure – Pointer to structure – Union.

Files: Streams and file types – Steps for file operation – File I/O – Structures read and write – Other file functions – Command line arguments.

UNIT – IV   **15 Hrs.**

Linear data structure: Introduction to data structures – List – Implementations – Traversal - Searching and retrieving an element - predecessor and successor – Insertion – Deletion – Sorting - Merging lists – Stack – Representation – Terms – Operations on stack – Implementation – Queue – Various positions of queue – Representation.

UNIT – V   **15 Hrs.**

Non Linear data structure: Trees – Binary Tree – Types of Binary Tree – Binary Tree Representation. Searching and Sorting: Introduction – Searching – Linear Search – Binary Search – Sorting – Insertion Sort – Selection Sort – Bubble Sort – Quick Sort.

Text Books

S. No.	Authors	Title of the Book	Publishers	Year and Edition
1	Ashok N Kamthane	Programming and Data Structures	Pearson Education, ISBN 81-297-0327-0.	2004, First Indian print

Reference Books

S. No.	Authors	Title of the Book	Publishers	Year and Edition
1	Balagurusamy E	Programming in ANSI C	Tata McGraw Hill Education Private Limited, New Delhi	2012, Sixth Edition.
2	Ashok N. Kamthane	Introduction to Data Structures in C	Dorling Kindersley PVT LTD.,	2009, Second Edition.
3	Dr.M.Rajaram,Dr.P.Uma Maheswari	Data Structures &Algorithms using C	Umayam Publications	July 2013, Fourth Edition

Web Resources

1. www.spokentutorial.org
2. www.cprogramming.com
3. www.sitesbay.com

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPA101	MATHEMATICAL FOUNDATION OF COMPUTER SCIENCE

Category	CIA	ESE	L	T	P	Credit
Supportive I	25	75	70	5		4

Preamble

The course provides the students to solve the problems in Statistics, optimization techniques and Discrete Mathematics. The course also endeavors the students to improve their reasoning and problem solving capabilities.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Apply statistical methods for different kinds of problems	K3
CO2	Demonstrate transportation problem and assignment problem	K4
CO3	Construct a network by PERT and CPM.	K2
CO4	List and develop mathematical logic, formulas and truth table	K2
CO4	Demonstrate the different types of relations and functions	K4

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	S
CO2	S	S	S	M	M
CO3	M	M	S	S	M
CO4	M	S	S	M	S
CO4	M	S	S	M	S

S- Strong; M-Medium; L-Low

Syllabus

UNIT I 15 **Hrs**

Measures of central tendency – Mean, Median and Mode –Relation between Mean, Median and Mode Dispersion– Range – Mean Deviation & Standard Deviation.

UNIT II 15 **Hrs.**

The Transportation Problem: Mathematical Formulation of the Problem – Initial Basic Feasible Solution (North-West Corner Rule, Minimum Cost Method, Vogel's Approximation Method) – Moving towards Optimality – Unbalanced Transportation Problems.

Assignment Problem: Mathematical Formulation of an Assignment Problem– Hungarian Assignment Method – Unbalanced Assignment Problems.

UNIT III   **15 Hrs.**

Replacement Problems: Introduction – Replacement of Equipment that deteriorates gradually – Replacement of Equipment that fails suddenly. **PERT – CPM:** Introduction –Rules of Network Construction– Critical Path Method – PERT Calculations.

UNIT IV   **15 Hrs.**

Mathematical Logic: Connectives: Negation – Conjunction – Disjunction –Statement Formulas and Truth Table– Well Formed Formulas – Tautologies – Equivalence of Formulas – Duality Law – Tautological Implications.

UNIT V   **15 Hrs.**

Relations: Properties of Binary Relations – Relation Matrix and the Graph of a Relation – Equivalence Relations – Composition of Binary Relations. Functions: Definition and Introduction – Composition of Functions –Types of Functions.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	Pillai R.S.N., Bagavathi V	Statistics: Theory and Practice	Sultan Chand and Sons &Company Ltd. New Delhi	Reprint 2005
2	Kanti Swarup, Gupta P K & Man Mohan	Operations Research	S.Chand & Company Pvt Ltd, New Delhi	2001
3	J.P. Tremblay, R.Manohar	Discrete Mathematical Structures with Applications to Computer Science	Tata McGraw-Hill Edition	1997

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	Gupta S.C, Kapoor V.K	Fundamental of Mathematical Statistics	Sultan Chand and Sons	2005
2	Gupta P.K, Hira D S	Introduction to Operations Research	S.Chand & Company Pvt Ltd, New Delhi	First Edition, 2013

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPS101	PC HARDWARE AND TROUBLESHOOTING

Category	CIA	ESE	L	T	P	Credit
Skill Based Subject I	25	75	40	5	-	2

Preamble

This course is designed to enable the students to get a detailed knowledge of all the hardware components that make up a computer and to understand the different interfaces required for connecting these hardware devices. At the end of the program the students will be able to understand the fundamentals of Hardware.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Acquire the basic concept and structure of computer hardware components to examine and specify their functions	K1
CO2	Identifying the different storage mediums and understand the purpose and functions of the computer peripherals	K2
CO3	To apply system installation and related problems, upgrade and configure operating systems	K3
CO4	To analyze and categorize different drives and input devices and output devices	K4
CO5	To be able to perform diagnostic procedures and troubleshooting techniques to personal computers, portable devices, operating systems and computer peripherals	K4

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	M
CO2	M	S	M	S	M
CO3	S	M	S	S	M
CO4	M	S	M	S	S
CO5	S	S	M	S	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT I   **9 Hrs.**

Personal Computer – Inside PC.

UNIT II   **9 Hrs.**

Memory - Recording and Retrieval in Magnetic Media: Magnetic storage fundamentals – Diskette Basics – Hard Disk & Tracks and Sectors – Data Recording formats – Disk organization in DOS – Hard disk drive controller.

UNIT III   **9 Hrs.**

CD-ROM Disks & Drive – DVD – Sound Blaster – Input Devices – Monitors and Display Adaptors**.**

UNIT IV   **9 Hrs.**
Output Devices – Computer Installation.
UNIT V   **9 Hrs.**
Trouble Shooting and servicing – Computer maintenance – Computers and Communications.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Balasubramanian D.	Computer Installation and Servicing	TMH	2nd Edition.

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Stephen J.Bigelow	Trouble shooting, Maintaining and Repairing PCs	TMH	2008, 5th Edition.
2.	Ron Gilster	PC Hardware A Beginners Guide	TMH	2007, 11th Edition

Web Resources
1. www.infibeam.com
2. www.pdf.textfiles.com
3. www.abebooks.com

Pedagogy
Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPCP01	PRACTICAL 1: DATA STRUCTURES USING C LAB

Category	CIA	ESE	L	T	P	Credit
Core Paper II	40	60	-	5	70	3

Preamble

To make students to write C program for various problems and can be used to design the system software like operating system and compiler. To develop the applications software like database and spread sheets. To evaluate any kind of mathematical equations.

Course Outcomes

On the successful completion of the course, Students should able to,

CO Number	CO Statement	Knowledge Level
CO1	Exercise conditional and iterativestatements in C	K3
CO2	Able to write the C programs using Pointers toaccess arrays, strings and functions	K3
CO3	Write C programs using Pointers to access arrays, strings, functions, structures and unions	K4
CO4	Using files concept to show input andoutput of files in C programming	K3
CO5	Implement the data structure concept using C program	K3

S- Strong; M-Medium; L-Low

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	S	S	M	M	M
CO3	S	M	M	S	S
CO4	S	S	M	S	S
CO5	M	S	S	M	S

Syllabus

1. Write a C program to implement the concept of Decision statements.
2. Write a C program to implement the concept of looping statements.
3. Write a C program to implement the concept of String functions.
4. Write a C program to implement the concept of Pointers and Arrays.
5. Write a C program to implement the concept of Structures and Functions.
6. Write a C program to implement the concept of File operations.
7. Write a C program to demonstrate the working of Stack of size N using an array. Check the Stack status for overflow, under flow and empty.

8. Write a C program to simulate the working of a Queue. Check the Queue status for empty and full.
9. Write a C program to implement the concept of Searching.
10. Write a C program to implement the concept of Sorting.

CODE	COURSE TITLE
18DCPCP02	MULTIMEDIA LAB

Category	CIA	ESE	L	T	P	Credit
CORE	40	60	-	-	60	3

Preamble

To make students learn and use Photoshop and Flash. To get hands on experience in programming with animation using Photoshop and Flash tool. To develop effective computer programming skills in animation field. To create a simple animation using the approaches introduced in the course.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Create text and apply various text formatting styles	K2
CO2	Create image and apply various color options and filter effects	K2
CO3	Demonstrate the concept of merging layers	K4
CO4	Apply different types of animation effects	K3
CO5	Apply 3D animation and morphing animation effects	K3

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	S	M
CO2	M	S	S	S	M
CO3	M	S	S	S	M
CO4	S	S	S	M	M
CO5	S	S	M	M	S

S- Strong; M-Medium; L-Low

Syllabus

PHOTOSHOP

1. Applying various texts formatting.
2. Apply different editing and color options for an image.
3. Apply various filter effects for an image.
4. Design the page using gradient tool.
5. Merge images using layer palette.

FLASH

6. Create an animation to represent the growing moon.
7. Create an animation to indicate a ball bouncing on steps.
8. Build a home and tree along a flying bird.
9. Create a 3D animation effects.
10. Create an animation using morphology.

CODE	COURSE TITLE
18DCPC204	DATABASE MANAGEMENT SYSTEMS

Category	CIA	ESE	L	T	P	Credit
Core Paper IV	25	75	55	5	-	4

Preamble

This course is designed to provide To provide a strong formal foundation in database concepts, technology and practice to the participants to groom them into well-informed database application developers.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Summarize the basics and fundamentals of RDBMS AND to understand the various designing concepts, storage methods, querying and managing databases.	K2
CO2	Understand the structure and model of the relational database system	K2
CO3	Summarize the concept of Entity Relationship Model in Database Applications.	K2
CO4	Demonstrate the various normalization techniques and data modeling	K3
CO5	Apply the SQL for Database Definition and Manipulation.	K3

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	M
CO2	S	M	S	M	S
CO3	S	S	S	M	M
CO4	S	M	M	L	M
CO5	S	S	M	S	S

Syllabus

UNIT - I   **12 Hrs.**

Introduction : Database - System Applications - Purpose of database Systems - View of Data - Data Models -Database Languages - Relational Databases - Data Storage and Querying-Transaction Management.

UNIT - II   **12 Hrs.**

Database Architecture - Data mining and Information Retrieval - Specialty Databases- Database users and Administrators. **Relational Databases:** Structure of Relational Databases- Database Schema - Keys- Relational Algebra.

UNIT - III   **12 Hrs.**

Integrity Constraints: Constraints on a Single Relation - Referential Integrity - Triggers. **Database Design and the E-R Model:** Entity-Relationship Model - Constraints - Entity-Relationship Diagram - Extended E-R Features.

UNIT - IV   **12 Hrs.**

Relational Database Design: Features of Good Relational Designs- Atomic Domains and First Normal Form –Keys and Functional Dependencies - BCNF-Third Normal Form- Higher Normal forms.

UNIT - V   **12 Hrs.**

Learning Basic SQL Commands: Learning MYSQL Data Types –Learning theTable Creation Syntax-Using the INSERT Command- Using the SELECT Command - Using the WHERE in Your Queries- Selecting from MultipleTables - Using the UPDATE Command to Modify Records - Using the REPLACE Command - Using the DELETE Command – Frequently used String functions in MYSQL- Using Date and Time Functions in MYSQL.

Text Books

S. No.	Authors	Title of the Book	Publishers	Year of Publication
1	Abraham Silberschatz, Hentry F.Korth, Sudharshan S	Database System Concepts	Mc-Graw Hill International Editions	2013,6th Edition (UNIT I,II,III & IV)
2	Julie C. Meloni	PHP, MYSQL and Apache	Pearson Education	2009, 4th Edition

Reference Books

S. No.	Authors	Title of the Book	Publishers	Year of Publication
1	Alexis Leon And Mathews Leon	Database Management Systems	Vikas Publishers	2002, 1st Edition.

2	Ramez Elmasri, Shamkant B. Navathe	Fundamentals of Database Systems	Pearson Education	2005,4th Edition.
3	Paul Bubois	MYSQL	Pearson Education	2016, 2nd Edition.

Web Resources
1. www.W3Schools.in/dbms
2. www.tutorialcup.com/dbms
3. www.W3Schools.com.sql

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE NAME
18DCPC205	WEB DESIGNING

Category	CIA	ESE	L	T	P	Credit
Core V	40	60	55	5	-	4

Preamble

To equip students with principles, knowledge and skills for the design and construction of web-enabled Internet applications using PHP and creating client side Java Scripts.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Identify basic PHP syntax and classify the client side and server side technologies.	K2
CO2	Create basic PHP scripts.	K_2
CO3	Demonstrate the use of control structures and looping statements	K3
CO4	Design and develop web applications with databases	K4
CO5	Develop a dynamic webpage by the use of Java Script	K3

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	S
CO2	S	M	M	S	S
CO3	S	M	M	M	L
CO4	S	S	M	M	S
CO5	S	S	M	S	M

Syllabus

UNIT – I   **12 Hrs.**

Introducing PHP: What is PHP? – What is MySQL? - Client side technologies – Server side scripting– PHP syntax and variables.

UNIT - II   **12 Hrs.**

PHP Control Structures and functions: Boolean expressions – branching - looping – functions – function documentation – defining your own function – variable scope – functions scope.

UNIT - III   **12 Hrs.**
Passing information with PHP – String handling: Strings – String functions. Arrays – Number handling.

UNIT - IV   **12 Hrs.**
Integrating PHP and MySQL – Performing database queries – Integrating web forms and databases – Working with Cookies and Sessions.

UNIT - V   **12 Hrs.**
Introduction to Scripting: JavaScript – Introduction to Scripting –Decision Making: Equality and Relational Operators –Control Structures – if Selection statement- if..else Selection Statement – while Repetition Statement – Operators- Essentials of counter-controlled repetition – for repetition Statement – switch Multiple Selection Statement – Do..While Repetition Statement – The break and continue Statements – **Functions**: Program Modules in Java Script - Programmer-Defined Functions - Function Definitions **Arrays**: Arrays - Declaring and allocating Arrays – Examples using Arrays - References and Reference Parameters – Passing Arrays to Functions

Text Books

S. No.	Authors	Title of the Book	Publishers	Year and Edition
1.	Steve Suehring, Tim Converse & Joyce Park	PHP 6 and MySQL 6 Bible	Wiley India Pvt. Ltd.	2017, 1st Edition
2.	P.J.Deitel&H.M.Deitel	Internet and World Wide Web- How to Program	Prentice Hall of India	2009, 4th Edition

Reference Books

S. No.	Authors	Title of the Book	Publishers	Year and Edition
1.	Deitel, Deitel&Neito	XML – How to Program	Pearson Education	2013,13th Impression
2.	Shelley Powers, et al	Dynamic Web Publishing Unleashed	Prentice Hall of India	1998,2nd Edition
3.	C. Xavier	World wide Web design with HTML	TMH	2007, 1st Edition
4.	Vikram Vaswani	PHP Programming Solutions	TMH	2007,1st Edition

Web Resources

1. www.php.net
2. www.tutorialrepublic.com

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

SEMESTER II

CODE	COURSE TITLE
18DCPC206	BASICS OF COMMUNICATION AND NETWORKING

Category	CIA	ESE	L	T	P	Credit
Core VI	25	75	60			4

Preamble

The course helps students to become familiar with layered communication architectures (OSI and TCP/IP). To understand the basics of error detection including parity and CRC and learn the principles of routing and its protocol and familiar with topics such as Security and digital signatures.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Recall the basics of communication, components of data communications, networks models and protocols and standard	K1
CO2	Describe physical layer media, transmission media, and error detection and correction techniques	K2
CO3	Utilize the routing algorithms and its various applications	K3
CO4	Analyze the issues and concepts of transport layer	K4
CO5	Examine the network security and its algorithms	K4

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	L	M	M
CO2	S	S	M	S	M
CO3	L	M	S	S	S
CO4	M	M	S	M	S
CO5	M	S	M	S	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT I   **12Hrs.**

Basics of Communication: Introduction – **Data Communications**: Components – Data Representation- Data Flow. **Networks**: Physical structures – Network Models – Categories of Networks – **The Internet:** Brief History – The Internet Today – Protocols and Standards.

UNIT II   **12 Hrs.**

The OSI Model **- Layers** – **Physical Layer Media:** Data and Signals – Digital and Analog Signals – **Transmission Media**: Guided media – Unguided Media – Telephone Network – Modems. **Error Detection and Correction**: Types of Errors – Cyclic Codes – Hamming Codes.

UNIT III   **12 Hrs.**

Network Layer: IPv4 addresses – Internetworking – Need for network layer – Address mapping – ICMP – **Routing:** Unicast routing protocols – Distance vector routing – Link state routing – Multicast routing protocols.

UNIT IV   **12Hrs.**

Transport Layer: TCP – Services – features – Segment – flow control – error control – Congestion control.

Application Layer: Domain Name System – Name space – Domain Name Space – DNS in the internet. **Electronic Mail:** Architecture – SMTP – File transfer - FTP.

UNIT V   **12 Hrs.**

Security: Cryptography **–** Symmetric key cryptography – Asymmetric key Cryptography – Digital Signature – Entity authentication.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	Behrouz A Forouzan	Data Communications and Networking	TMH	4th Edition

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	Andrew S Tanenbaum	Computer Networks	LPE Pearson	2005, 4th Edition
2	Prakash C. Gupta	Data Communications and Computer Networks	Pearson	2006, 1st Edition

Web References

1. www.computernetworkingnotes.com
2. www.tutorialpoints.com
3. www.smartzworld.com
4. www.nptel.ac.in

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPA202	ELECTRONIC ACCOUNTING

Preamble

Category	CIA	ESE	L	T	P	Credit
SUPPORTIVE 2	25	75	55	5	-	4

This course introduces students to explain the basic component computerized accounting and book keeping using ledger. To teach preparation of final accounting statements. Develop and understand the nature and purpose of financial statements in relationship to decision making and to explain working of accounting package for financial accounting.

Course Outcomes

CO Number	CO Statement	Knowledge Level
CO1	Able to operate the concepts and procedures of financial reporting, including income statement, statement of retained earnings, balance sheet, and statement of cash flows	K3
CO2	Recognize and analyze the Creation of ledgers, varieties of vouchers and Editing and deleing vouchers	K2
CO3	Able to schedule stock categories, editing and deleting stocks use accounting information to solve a variety of business problems	K3
CO4	Able to organize procedure of financial accounting for any organization and able to interact with accounting or information systems.	K4
CO5	Develop the ability to use the fundamental accounting equation to analyze the effect of business transactions on an organization's accounting records and financial statements.	K5

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	S	M
CO2	M	M	S	S	S
CO3	L	M	S	S	M
CO4	M	M	S	S	M
CO5	M	L	M	M	S

S- Strong; M-Medium; L-Low

Syllabus

UNIT I   **12 Hrs.**

Fundamentals of computerized accounting – Computerized accounting vs manual accounting –Architecture and customization of Tally – Features of Tally – Configuration of Tally – Tally screens and menus – Creation of company– Creating Groups – editing and deleting groups.

UNIT II   **12 Hrs.**

Creation of ledgers – Editing and deleting ledgers – Introduction to vouchers – Vouchers entry – Payment vouchers – Receipt vouchers – sales vouchers – Purchase vouchers – Contra vouchers – Journal vouchers – Editing and deleing vouchers.

UNIT III   **12 Hrs.**

Introduction of Inventories – Creation of stock categories – Creation of stock groups – creation of stock items – Configuration and features of stock item – editing and deleting stocks–Usage of stocks in Vouchers entry. Purchase orders–stock vouchers–Sales orders–Stock vouchers.

UNIT IV   **12 Hrs.**

Introduction to cost – creation of cost category – Creation cost centers – editing and deleting cost centers and categories – usage of cost category and cost – centers in vouchers entry – Budget and controls – Creation of budgets – Editing and deleting budgets – Generating and printing reports in detailed and condensed format.

UNIT V   **12 Hrs.**

Day books – Balance sheets – Trial Balance – Profit and Loss account – Ratio analysis, Cash flow statement – Fund flow statement – Cost center report – Inventory report – Bank reconciliation statement.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Dr.Mamrata Agrawal	Tally 9	DreamTech Press, New Delhi.	2010
2.	-	Computerized Accounting under Tally	Deva publications	-
3.	Nandhani A.K Nandhani K.K	Implementing Tally 7.2	BPB publication	2006, 2nd Edition.

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Asok K.Anadhani Kisor K Nandhani	Implementing Tally 9	BPB publication	2009, 1st Edition
2.	Roopa	Tally for Everyone	ADD-TO-CART Publishing.	2006, 1st Edition
3.	Vishnu Priya Singh	Tally	Computech Publication	2009, 3rd Edition

Web Resources

1. www.deloitte.com

2. www.ey.com
3. www.pallaspartnerid.ee

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPE211	MOBILE COMMERCE

Category	CIA	ESE	L	T	P	Credit
Elective I	25	75	55	5	-	4

Preamble

This course is designed to provide an in-depth view of the technologies used in Mobile commerce.

Course Outcomes

On the successful completion of the course students should able to

CO Number	CO Statement	Knowledge Level
CO1	Explains about E-Commerce and its environment	K2
CO2	Outline of the Mobile commerce	K2
CO3	Experiment with Mobile Advertising In Building a Brand using M– Commerce Business Models.	K3
CO4	Demonstrate distributed processing in LAN, MAN and also protocols conversions	K2
CO5	To Compare Asynchronous and Synchronous file transfer and Enterprise wide organizational problems.	K2

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	S	S
CO2	S	M	L	M	M
CO3	S	S	M	M	S
CO4	M	M	S	L	M
CO4	S	S	M	M	L

S-Strong ; M-Medium;L-Low

Syllabus

UNIT - I   **12 Hrs.**

ELECTRONIC COMMERCE: Introduction -The e-commerce environment - The e-commerce marketplace -Focus on portals, Location of trading in the marketplace - Commercial arrangement for transactions - Focus on auctions - Business models for e-commerce - Revenue models - Focus on internet start-up companies - the dot-com - E-commerce versus E-business.

UNIT - II   **12 Hrs.**

MOBILE COMMERCE: Introduction – Infrastructure of M– Commerce – Types of Mobile Commerce Services – Technologies of Wireless Business – Benefits and Limitations, Support, Mobile Marketing & Advertisement, Non– Internet Applications In M– Commerce – Wireless/Wired Commerce Comparisons.

UNIT - III   **12 Hrs.**

MOBILE COMMERCE TECHNOLOGY: A Framework for the Study of Mobile Commerce – NTT Docomo's I– Mode – Wireless Devices for Mobile Commerce – Towards a Classification Framework for Mobile Location Based Services – Wireless Personal and Local Area Networks –The Impact of Technology Advances on Strategy Formulation in Mobile Communications Networks.

UNIT - IV   **12 Hrs.**

MOBILE COMMERCE: THEORY AND APPLICATIONS: The Ecology Of Mobile Commerce – The Wireless Application Protocol – Mobile Business Services – Mobile Portal – Factors Influencing The Adoption Of Mobile Gaming Services – Mobile Data Technologies And Small Business Adoption And Diffusion – M–Commerce In The Automotive Industry – Location– Based Services: Criteria For Adoption And Solution Deployment – The Role Of Mobile Advertising In Building A Brand – M– Commerce Business Models.

UNIT - V   **12 Hrs.**

BUSINESS– TO– BUSINESS MOBILE E-COMMERCE: Enterprise Enablement – Email And Messaging – Field Force Automation (Insurance, Real Estate, Maintenance, Healthcare) – Field Sales Support (Content Access, Inventory) – Asset Tracking and Maintenance/Management – Remote IT Support –Customer Retention (B2C Services, Financial, Special Deals) – Warehouse Automation – Security.

Text Books

S. No.	Authors	Title of the Book	Publishers	Year and Edition
1.	Dave Chaffey	E-Business and E-Commerce Management	Pearson Education	2009, 3rd Edition.
2.	Brian E. Mennecke, Troy J. Strader	Mobile Commerce: Technology, Theory and Applications	Idea Group Inc., IRM press	2003

Reference Books

S. No.	Authors	Title of the Book	Publishers	Year and Edition
1.	P. J. Louis	M-Commerce	McGraw- Hill Companies	2013,1st Edition
2.	Paul May	Mobile Commerce: Opportunities, Applications, and Technologies of Wireless Business	Cambridge University Press	2016,1st Edition
3.	Michael P. Papazoglou, Peter M.A. Ribbers	E-business organizational and Technical Foundation	Wiley India	2009, 1st Edition

4.	Dr.Pandey , Saurabh Shukla	E-commerce and Mobile commerce Technologies	Sultan chand	2011, 1st Edition

Web Resources

1. www.spoken-tutorial.org
2. www.w3schools.com
3. www.nptel.ac.in
4. www.tutorialpoint.com

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPE221	DATA MINING

Category	CIA	ESE	L	T	P	Credit
ELECTIVE – I	25	75	55	5		4

Preamble

The objective is to introduce the concept of data mining tasks, statistical concepts and the techniques for machine learning that are used in data mining. It explains a variety of machine learning methods for both supervised and unsupervised data. It describes the different methods for association rule mining and web mining.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the concepts of data mining tasks, issues, metrics and its related concepts	K2
CO2	Describe the some of the statistical concepts and terminology associated with database systems and machine learning	K2
CO3	Apply methods for data classification and prediction algorithms	K3
CO4	Demonstrate different data clustering methods	K4
CO5	illustrate methods for mining frequent patterns, associations, and web mining	K4

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	M	L	M	S	S
CO2	M	S	S	M	S
CO3	S	M	S	S	M
CO4	S	M	M	S	S
CO5	L	M	S	S	S

S- Strong; M-Medium; L-Low

Syllabus

UNIT - I   **12 Hrs.**

Basic Data Mining Tasks – Data Mining Vs Knowledge Discovery in Databases – Data Mining Issues – Data Mining Metrics – Social Implications of Data Mining – Data Mining from a Database Perspective – Information Retrieval – Decision Support System- Dimensional modeling – Data Warehousing – OLAP.

UNIT - II   12Hrs.
Data Mining Techniques: Introduction − A Statistical Perspective on Data Mining − Similarity Measures − Decision Trees − Neural Networks − Genetic Algorithms.

UNIT - III   12Hrs.
Classification: Introduction − Statistical based Algorithms − Distance based Algorithms − Decision Tree based Algorithms − Neural Network based Algorithms − Rule based Algorithms − Combination Techniques.

UNIT - IV   12Hrs.
Clustering: Introduction − Similarity and Distance Measures − Outliers − Hierarchical Algorithms − Partitional Algorithms- Clustering Large Databases.

UNIT - V   12Hrs.
Association Rules: Introduction − Large Item Sets − Basic Algorithms − Parallel & Distributed Algorithms − Comparing Approaches − Incremental Rules.**Web Mining:** Introduction − **Web Content mining**: Crawlers − Harvest System − Virtual Web View − Personalization − **Web Structure Mining:** PageRank − Clever − **Web Usage Mining:** Preprocessing − Data Structures − Pattern Discovery − Pattern analysis.

Text Books

Sl. No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Margaret H. Dunham	Data Mining: Introductory and Advanced Topics	Pearson Education	2008, 1st Edition

Reference Books

Sl. No.	Author Name	Title of the Book	Publisher	Year and Edition
1	Jiawei Han &MichelineKamber	Data Mining: Concepts and Techniques	Elsevier India Private Limited	2006, 2nd Edition
2	Pang-Ning Tan, Vipin Kumar & Michael Steinbach	Introduction to Data Mining	Pearson Education	2006, 1st Edition

Web Resources
1. www.wideskills.com
2. www.guru99.com
3. www.tutorialride.com
4. www.tutorialspoint.com
5. www.slideshare.net

Pedagogy
Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPE231	INTERNET OF THINGS

Category	CIA	ESE	L	T	P	Credit
Elective I	25	75	55	5		4

Preamble

The purpose of this course is to impart knowledge on IoT Architecture and various protocols, study their implementations. The course aims to introduce students to the concepts underlying the Internet of Things (IoT) that are important to understand the state-of-the-art as well as the trends for IoT. The students will be introduced to the history and evolution of IoT, as well as case studies from various industry domains.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Capable to know building blocks of Internet of Things and characteristics.	K2
CO2	Recognize the application areas of IOT.	K2
CO3	Realize the revolution of Internet in Mobile Devices, Cloud &Sensor Networks.	K3
CO4	Building state of the art architecture in IoT.	K3
CO5	Application of IoT in Industrial and Commercial Building Automation and Real World Design Constraints.	K4

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	S
CO2	M	S	M	S	M
CO3	S	S	S	M	S
CO4	S	S	S	M	S
CO5	M	S	S	S	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT   **12 Hrs.**

M2M to IoT-The Vision-Introduction, From M2M to IoT, M2M towards IoT-the global context, A use case example, Differing Characteristics.

UNIT II   **12 Hrs.**

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.

UNIT III   **12 Hrs.**

M2M and IoT Technology Fundamentals- Devices and gateways, Local and wide area networking, Data management, Business processes in IoT, Everything as a Service(XaaS), M2M and IoT Analytics, Knowledge Management.

UNIT IV   **12 Hrs.**

IoT Architecture-State of the Art – Introduction, State of the art, Architecture Reference Model- Introduction, Reference Model and architecture, IoT reference Model.

UNIT V   **12 Hrs.**

IoT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views. Real-World Design Constraints-Introduction, Technical Design constraints-hardware is popular again, Data representation and visualization, Interaction and remote control.Industrial Automation- Service-oriented architecture-based device integration, SOCRADES: realizing the enterprise integrated Web of Things, IMC-AESOP: from the Web of Things to the Cloud of Things,Commercial Building Automation- Introduction, Case study: phase one-commercial building automation today, Case study: phase two- commercial building automation in the future.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Jan Holler, VlasiosTsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David BOYLE	From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence.	Academic Press	2014, 1st Edition.

Reference Books

Sl.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Vijay Madisetti and ArshdeepBahga	Internet of Things (A Hands-on-Approach)	Universities Press	2017, 1st Edition.
2.	Francis daCosta	Rethinking the Internet of Things: A Scalable Approach to Connecting Everything	Apress Publications	2013, 1st Edition.

Web Resources

1. www.howstuffworks.com
2. www.coursera.com
3. www.tutorialpoint.com

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPE241	**COMPUTATIONAL TECHNIQUES**

Category	CIA	ESE	L	T	P	Credit
ELECTIVE I	25	75	55	5	-	4

Preamble

This course helps the students to know the concepts of various computing and its architecture. Able to understand and emphasis on Grid computing, soft computing and cloud computing.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Outline on the introduction of computing and various types of computing with its characteristics	K2
CO2	Understand the fundamentals of grid computing and its components	K2
CO3	Summarize the topics on soft computing, artificial neural networks, fuzzy logic and genetic algorithms	K2
CO4	Relate the cloud models (iaas, paas, saas)	K2
CO5	Show the fundamentals of Green computing, Architecture and Green assets and modeling	K2

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	L	M	S	M	S
CO2	M	S	M	S	M
CO3	S	S	S	M	S
CO4	M	M	S	S	S
CO5	S	S	M	S	M

S- Strong; M-Medium; L-Low

Syllabus

UNIT I **12 Hrs.**

Computational Techniques: Introduction – Types of Computing – Characteristics of Computing – Grid Computing – Soft Computing – Cloud Computing – Green Computing.

UNIT II   **12 Hrs.**

Grid Computing: Fundamentals – Scope of Grid Computing – Merging the Grid sources - OGSA – Sample Use Cases – OGSA Platform Components – OGSI – OGSA Basic Services – Middle solutions.

UNIT III   **12 Hrs.**

Soft Computing: Artificial neural network: Introduction, characteristics- learning methods – taxonomy – Evolution of neural networks- basic models – important technologies – applications. Fuzzy logic: Introduction – crisp sets- fuzzy sets – crisp relations and fuzzy relations: Cartesian product of relation – classical relation, fuzzy relations, tolerance and equivalence relations, non-iterative fuzzy sets. Genetic algorithm - Introduction – biological background – traditional optimization and search techniques – Genetic basic concepts.

UNIT IV   **12 Hrs.**

Cloud Computing: Technologies for Network-Based System – System Models for Distributed and Cloud Computing – NIST Cloud Computing Reference Architecture. Cloud Models:- Characteristics – Cloud Services – Cloud models (IaaS, PaaS, SaaS) – Public vs Private Cloud –Cloud Solutions - Cloud ecosystem – Service management – Computing on demand – Security in the Cloud.

UNIT V   **12 Hrs.**

Green Computing: Green IT Fundamentals: Business, IT, and the Environment – Benefits of a green data centre - Green Computing: Carbon Foot Print, Scoop on Power – Green IT Strategies: Drivers, Dimensions, and Goals – Environmentally Responsible Business: Policies, Practices, and Metrics. **GREEN ASSETS AND MODELING**: Green Assets: Buildings, Data Centers, Networks, Devices, Computer and Earth Friendly peripherals, Greening Mobile devices – Green Business Process Management: Modeling, Optimization, and Collaboration – Green Enterprise Architecture – Environmental Intelligence – Green Information Systems: Design and Development Models.

Text Books				
Sl.No.	**Author Name**	**Title of the Book**	**Publisher**	**Year and Edition**
1	Joshy Joseph & Criag Fellenstein	Grid Computing	PHI, PTR	2013
2	S.N.Sivanandam and S.N.Deepa	Principles of Soft Computing	Wiley India Pvt Ltd	2011
3	George Reese	Cloud Application Architectures: Building Applications and Infrastructure in the Cloud	O'Reilly	
4	BhuvanUnhelkar	IT Strategies and Applications- Using Environmental Intelligence	CRC Press,	June 2011

Reference Books

Sl.No	Author Name	Title of the Book	Publisher	Year and Edition
1	Sandeep Bhowmik	Cloud Computing	Cambridge University	2017, 1st Edition.

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar

CODE	COURSE TITLE
18DCPCP03	WEB DESIGNING LAB

Category	CIA	ESE	L	T	P	Credit
PRACTICAL III	40	60	-	5	70	3

Preamble

This course demonstrates how does web works really, what makes web sites work and to equip various concepts of Validation, designing and how to in-corporate those in web pages. It gains practical experience on web development and a thorough understanding of PHP and MySQL with Java Script.

Course Outcomes

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

COs	CO Statement	Knowledge Level
CO1	Develop a simple web forms using PHP tags	K2
CO2	Illustrate the use of array and control structures	K2
CO3	Design and develop an application with PHP and MySQL	K3
CO4	Demonstrate the use of Java Script	K4
CO5	Create a Cookie and Session in a webpage	K3

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	S	S	M	S	S
CO3	M	S	S	M	S
CO4	S	M	S	S	M
CO5	S	M	M	S	S

Syllabus

1. Create a simple HTML form and accept the user name and display the name through PHP echo statement.
2. Develop PHP program using Array concept.
3. Develop PHP program using control structures.
4. Develop PHP program using looping structures
5. Develop PHP program using Form Handling.
6. Using PHP and MySQL, develop a program to accept book information viz. Accession number, title, authors, edition and publisher from a web page and store

the information in a database and to search for a book with the title specified by the user and to display the search results with proper headings.

7. Write a JavaScript function to reverse a number.
8. Design a page using cookies and sessions.

Pedagogy

Lecture, PPT, Assignment.

SEMESTER II

CODE	COURSE TITLE
18DCPCP04	OFFICE AUTOMATION AND TALLY LAB

Category	CIA	ESE	L	T	P	Credit
PRACTICAL IV	40	60		5	70	3

Preamble

The students will learn how to use various applications in Microsoft Office.To create excellent accounting technicians who can understand and present the financial health of organizations. The course trains students to be well versed in accounting concepts - right from recording transactions to income statements, balance sheets, trial balance and accounting cycle.

Course Outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Modify text using various formatting options from the editing tools under the Home tab.	K4
CO2	Write functions in Microsoft Excel to perform basic calculations and to convert number to text and text to number.	K4
CO3	Create a presentation in Microsoft PowerPoint that is interactive and legible content.	K4
CO4	Impart knowledge regarding concepts of Financial Accounting.	K4
CO5	Recognize the power and potential of Tally Accounting Software from the business perspective.	K4

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	S
CO2	M	S	S	M	S
CO3	S	M	S	S	M
CO4	M	S	S	M	S
CO5	S	M	S	S	M

S- Strong; M-Medium; L-Low

Syllabus

1. Prepare a Mark sheet of a student using Tables in MS-Word.
2. Write a covering Letter to apply for a Job in a Company in MS-Word using mail merge.
3. Create a student data in Excel and find sum, average and result.
4. Create a simple bar chart to high light the sales of a company for 3 different periods.
5. Create a simple presentation about basics of computer.
6. Create of Company, Groups – Single & Multiple.
7. Posting of Journal to ledger – Single & Multiple.

8. Preparation of Accounting Vouchers.
9. Preparation of Trial Balance.
10. Financial Statement: Trading Account, Profit and Loss Account and Balance Sheet.