Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Information Technology
B.Tech. (CSE-Artificial Intelligence/Full Stack Development & Block chain-IBM)
Choice Based Credit System (CBCS)-2023-27
SEMESTER-IV

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME					L	T	P	CREDITS
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
ML307	BS	Environmental Management and Sustainability	60	20	20	0	0	4	0	0	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

The student will have ability to:

1. To create awareness towards various environmental problems.
2. To create awareness among students towards issues of sustainable development.
3. To expose students towards environment friendly practices of organizations.
4. To sensitize students to act responsibly towards environment.

Course Outcomes (COs):

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes

The students will be able to

1. The course will give students an overview of various environmental concerns and practical challenges in environmental management and sustainability.
2. Emphasis is given to make students practice environment friendly behavior in day-to-day activities.

Syllabus:

Unit I: Introduction to Environment Pollution and Control **10HRS**

1. Pollution and its types (Air, Water, and Soil): Causes, Effects and Control measures
2. Municipal Solid Waste: Definition, Composition, Effects
3. Electronic Waste: Definition, Composition, Effects
4. Plastic Pollution: Causes, Effects and Control Measures

Unit II: Climate Change and Environmental Challenges

1. Global Warming and Green House Effect
2. Depletion of the Ozone Layer

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3. Acid Rain
4. Nuclear Hazards

Unit III: Environmental Management and Sustainable Development 9HRS

1. Environmental Management and Sustainable Development: An overview
2. Sustainable Development Goals (17 SDGs)
3. Significance of Sustainable Development
4. Environment Friendly Practices At Workplace and Home (Three Rs' of Waste Management,
   Water Conservation, Energy Conservation)

Unit 1V: Environmental Acts 8HRS

1. The Water (Prevention and Control of Pollution) Act, 1974: Objectives, Definition of Pollution under this act, Powers and Functlons of Boards
2. The Air (Prevention and Control of Pollution) Act, 1981:Objectives, Definition of Pollution under this act, Powers and Functions of Böards
3. The Environment (Protection) Act, 1986: Objectives, Definition of important terms used in this Act, Details about the act.
4. Environmental Impact Assessment: Concept and Benefits

Unit V:Role of Individuals, Corporate and Society 7HRS

1. Environmental Values
2. Positlve and Adverse Impact of Technological Developments on Society and Environment
3. Role of an individual/ Corporate/ Society in environmental conservation
4. Case Studies: The Bhopal Gas Tragedy, New Delhi's Air Pollution, Arsenic Pollution in Ground Water (West Bengal), Narmada Valley Project, Cauvery Water Dispute,Fukushima Daiichi Disaster (Japan), Ozone Hole over Antarctica, Ganga Pollution, Deterioration of Taj

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Mahal. Uttarakhand flash floods.

Text Book:

1. Rogers, P.P., Jalal, K.F., Boyd, I.A.(Latest Edition) . An Introduction to Sustainable Development. Earthscan

Reference Books: -

1. Kalam, A.P.J. (Latest Edition). Target *3 Billon: Innovative Solutions Towards Sustainable Development.* Penguin Books
2. Kaushik, A. and Kaushik (Latest Edition). Perspectives *in Environmental Studies.* New Delhi: New Age International Publishers.
3. Dhameja, S.K. (Latest Edition). *Environmental Studies.* S.K. Kataria and Sons.New Delhi
4. Bharucha,E. (Latest Edition). *Environmental Studies for Undergraduate Courses.* New Delhi: University Grants Commission.
5. Wright, R. T. (Latest Edition). *Environmental Science: towards a sustainable future. New* Delhi: PHL Learning Private Ltd.
6. Rajagopalan, R. (Latest Edition). *Environmental Studies.* New York: Oxford University Press.

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BTCS401N	DCC	Data Base Management Systems	60	20	20	30	20	3	0	2	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;
*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

The student will have ability :

1. To differentiate among the various database system according to their function.
2. To understand the process to develop database model and database design.
3. To understand managing a database using Structured Query Language.
4. To expand an understanding of necessary DBMS concepts such as: Database Transactions, Database Security, Integrity, Concurrency.
5. To understand and build a straightforward database system and show competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS.

Course Outcomes (COs):

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.

The students will be able to

1. Construct conceptual data models by identifying the entities and relationships.
2. Evaluate the normality of a logical data model, and correct any anomalies.
3. Develop physical data models for relational database management systems.
4. Implement relational databases using a RDBMS
5. Work as a valuable member of a database design and implementation team.

SYLLABUS:

UNIT I

10HRS

Introduction: Concept & Overview of DBMS, Three Schema Architecture of DBMS, Database Approach v/s Traditional File Accessing Approach, Advantages of Database Systems, Data Models, Schema and Instances, Data Independence, Data Base Language and Interfaces, Functions of DBA and Designer, Database Users.

Entity-Relationship Model: Basic concepts, Design Issues, Mapping Constraints, Keys, Entity- Relationship Diagram, Weak Entity Sets and Extended E-R features. ER Diagram to Relational Table conversion.

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UNIT II **9HRS**

Relational Model: Structure of Relational Databases, Relational Algebra, Relational Calculus, Extended Relational Algebra Operations, Joins and its type. Integrity Constraints. Referential Integrity, Intension and Extension.

UNIT III **8HRS**

SQL and PL/SQL: SQL commands, Set operations, Aggregate Functions, Null Values, Domain Constraints, Assertions, Views, Nested Sub Queries, Stored Procedures and Triggers, Database Security, Application development using PLSQL.

Relational Database Design: Functional Dependency, Database Anomalies, Normalization and its forms, Multi-Valued Dependencies, 4NF, Join Dependency, 5NF.

UNIT IV **7HRS**

Transaction and Concurrency Control: Physical Data Structures, Query Optimization, Transaction Model properties, State Serializability, Concurrency control protocols, Multiple Granularities, Granularity of Data Item. Multi version schemes, Database Recovery Methods, Recovery in Multi-Database System and Database Backup and Recovery from Catastrophic Failure

UNIT V **8HRS**

File Organization and Index Structure: File & Record Concept, Placing file records on Disk, Types of Records, Types of Single-Level Index, Multilevel Indexes, Dynamic Multilevel Indexes using B tree and B+ tree . Mongo DB, NoSQL types, Features and tools.

Text Book:

1. Henry F. Korth and Silberschatz Abraham, “Database System Concepts”, Mc.GrawHill, 6th Edition,2015.

Reference Books:

1. Raghu Ramakrishnan and Johannes Gehrke “Database Management Systems” McGraw- Hill Education, 2003.
2. Kahate, Atul “Introduction to Database Management Systems” Pearson Education India, 2006.

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*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

3. C J Date, "An Introduction to Database System", Pearson Educations, 8th Edition, 2004
4. Ivan Bayross, "SQL, PL/SQL - The Programming Language of Oracle", BPB Publications 4th Revised Edition, 2010.
5. Elmasri, Navathe, "Fundamentals of Database Systems", Pearson Educations 7th Edition, 2016.
6. SeemaKedar, Database Management System, Technical Publications, 2009.
7. Rajiv Chopra,Database Management System (DBMS) A Practical Approach. Kindle Edition, S Chand (December 1, 2010), 2017.

Suggested List of Experiment:-

1. Design a Database and create required tables. For e.g. Bank, College Database.
2. Apply the constraints like Primary Key, Foreign key, NOT NULL to the tables.
3. Write a SQL statement for table and record handling like implementing INSERT statement, using SELECT and INSERT together, DELETE, UPDATE, TRUNCATE statements and DROP, ALTER statements.
4. Write the queries for Retrieving Data from a Database Using the WHERE clause, using Logical Operators in the WHERE clause , Using IN, BETWEEN, LIKE, ORDER BY, GROUP BY and HAVING Clause, Using Aggregate Functions and Combining Tables Using JOINS.
5. Write the query for implementing the following functions: MAX (), MIN (), AVG (), COUNT ().
6. Write the query to implement the concept of Integrity constrains.
7. Write the query to create the views.
8. Perform the queries for triggers.
9. Perform the following operation for demonstrating the insertion , updating and deletion using the referential integrity constraints.
10. Write the query for creating the users and their role. Using GRANT and REVOKE operations.
11. Develop a small application for a patient admitted in a hospital which has capability of inserting, deleting, updating, the patient record. The application should also be able to search the patients record by its id.

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BTIT301N	DCC	Computer Networks	60	20	20	30	20	3	0	2	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;
*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):
The student will have ability to:
1. Understand the general overview of the concepts and fundamentals of computer networks.
2. Understand the various components required to build different networks.
3. Familiarize the students with the standard models for the layered approach to communication between machines in a network and the protocols of the various layers.

Course Outcomes (COs):
After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.
The students will be able to
1. Understanding basic computer network technology.
2. Understand the functions of each layer in the OSI and TCP/IP reference model.
3. Obtain the skills of subnetting and routing mechanisms
4. Familiarity with the essential protocols of computer networks, and how they can be applied in network design and implementation.

Syllabus:
UNIT I 9HRS
Introduction :Importance of Computer Networks, Classifications & Types. Layered Architecture: Protocol hierarchy, Interfaces and Services, Connection Oriented &Connection less Services, ISO- OSI Reference Model, TCP/IP model overview, comparison of TCP/IP and ISO-OSI reference model.

UNIT II 9HRS
Data Link Layer &MAC Sublayer:Need, Services Provided, Design issues, Elementary data link protocols: simplex protocol, A simplex stop and wait protocol for an error-free channel, A simplex stop and wait protocol for noisy channel. Sliding Window protocols: A one-bit sliding window protocol, A protocol using Go-Back-N, A protocol using Selective Repeat, MAC Addressing, Binary Exponential Back-off (BEB) Algorithm, Distributed Random Access Schemes/Contention Schemes: for Data Services (ALOHA and Slotted- ALOHA), CSMA, CSMA/CA, CSMA/CD.

UNIT III 9HRS
Network Layer: Need, Services Provided, Design Issues, Routing Algorithms and types of Routing Algorithm, IPv4, IPv6, Classful and classless Addressing, Subnetting, Supernetting.

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BTIT301N	DCC	Computer Networks	60	20	20	30	20	3	0	2	4

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UNIT IV 10HRS

Transport Layer: Need, Design Issues, Multiplexing and Demultiplexing, transport layer services, UDP, UDP Header Format, Principles of reliable data transfer, TCP, Connection Management, TCP Flow Control, TCP Congestion Control, TCP Header Format, TCP Timer Management, SCTP.

UNIT V 8HRS

Session layer: Overview, Authentication, Session layer protocols, Presentation layer: Overview, Data conversion, Encryption and Decryption, Presentation layer protocols (LPP, Telnet, X.25 packet Assembler/Disassembler), Application Layer: Domain name system, SNMP, Electronic Mail; the World WEB, HTTP, FTP.

Text Book:

1. Andrew S Tanenbaum, Computer Networks, 6th Edition, Pearson Education, 2016.

Reference Book:

1. BehrouzA.Forouzan, TCP/IP-Protocol suite, 4th edition, McGraw-Hill, 2010.
2. William Stallings, Data and Computer Communication, 10th edition Pearson, 2014.
3. Comer, Internet working with TCP/IP Volume one, Addison-Wesley, 2015.
4. W. Richard Stevens, TCP/IP Illustrated, Volume 1, 2nd Edition Addison-Wesley Professional Computing Series.

Suggested List of Experiments: -

1. Demonstrate Different Types of Network Equipment's.
2. Color coding standard of CAT 5, 6, 7 and crimping of cable in RJ-45.
3. LAN installations and Configurations.
4. Experiment with basic Network configuration commands.
5. Write a program for error detection and correction technique.
6. Write a program for framing.
7. Write a program for routing algorithm.
8. Socket Programming.
9. Study about different network simulators.
10. Establish and simulate peer to peer network using packet tracer.
11. Simulate LAN using hub and switch and discuss pros and cons of hub.
12. Router configuration using packet tracer.

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BTCS302N	DCC	Analysis & Design of Algorithms	60	20	20	30	20	3	0	2	4

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Course Educational Objectives (CEOs):
The student will have ability to:
COURSE OBJECTIVE

1. To learn the algorithm analysis techniques.
2. To critically analyze the efficiency of alternative algorithmic solutions for the same problem
3. To understand the limitation of algorithm power.
4. To understand different algorithm design techniques.

Course Outcomes (COs):
After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.
The students will be able to
2. Define the basic concepts of algorithms and analyze the performance of algorithms.
1. Explain different standard algorithm design techniques, namely, divide & conquer, greedy, dynamic programming, backtracking and branch & bound.
2. Demonstrate standard algorithms for fundamental problems in Computer Science.
3. Design algorithms for a given problem using standard algorithm design techniques.
4. Analyze and compare the efficiency of various algorithms of a given problem.
5. Identify the limitations of algorithms in problem solving.
6. To identify the types of problem, formulate, analyze and compare the efficiency of algorithms.

Syllabus:

UNIT I 10HRS
Algorithms Designing: Algorithms, Analyzing Algorithms, Asymptotic Notations, Heap Sort, Sorting and Searching Algorithms and their Analysis in terms of Space and Time Complexity.
Divide and Conquer:
General Method, Binary Search, Merge Sort, Quick Sort, Selection Sort, Strassen's Matrix Multiplication Algorithms.

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BTCS302N	DCC	Analysis & Design of Algorithms	60	20	20	30	20	3	0	2	4

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UNIT II 9HRS

Greedy Method: General Method, fractionalKnapsack Problem, Job Sequencing with Deadlines, Minimum-Cost Spanning Tree - Prim's and Kruskal's algorithm, Single Source Shortest Paths.

UNIT III 8HRS

Dynamic Programming: General Method, Optimal Binary Search Trees, O/1 Knapsack, multistage graph, Traveling Salesperson Problem, All Pairs Shortest Paths.

UNIT IV 7HRS

Backtracking: General Method, 8-Queens Problem, Graph Coloring, Hamiltonian Cycles, Sum of Subsets.

Branch and Bound:GeneralMethod, O/1 Knapsack Problem, Traveling Salesperson Problem.

UNIT V 8HRS

NP Hard and NP Complete Problems: Basic Concepts, Cook's Theorem, NP Hard Graph and NP Scheduling Problems, Some Simplified NP Hard Problems.

Text Book:

1. Ellis Horowitz and SartajSahni, "Fundamental of Computer Algorithms", 2nd Edition, Galgotia Publication, 2001.

Reference Books:

1. Thomas H Cormen, Charles E Leiserson and Ronald L Rivest "Introduction to Algorithms",3rd Edition, MIT Press. 2009.
2. Donal E Knuth, "Fundamentals of Algorithms: The Art of Computer Programming" Vol l,3rd Edition, Pearson Educatio, 1997.
3. Goodman, S.E. &Hedetnieni,"Introduction to Design and Analysis of Algorithm", Tata McGraw Hill, 1977.
4. S. Dasgupta, C. H. Papadimitriou, and U. V. Vazirani,"Algorithms",Tata McGraw Hill, 2006.
5. J.E Hopcroft, J.D Ullman, "Design and analysis of algorithms" TMH Publication.

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BTCS302N	DCC	**Analysis & Design of Algorithms**	60	20	20	30	20	3	0	2	4

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Suggested List of Experiments: -

1. Write a program for Iterative and Recursive Binary Search.
2. Write a program for Merge Sort.
3. Write a program for Quick Sort.
4. Write a program for Strassen's Matrix Multiplication.
5. Write a program for minimum spanning trees using Kruskal's algorithm.
6. Write a program for minimum spanning trees using Prim's algorithm.
7. Write a program for single sources shortest path algorithm.
8. Write a program for Floyd-Warshal algorithm.
9. Write a program for traveling salesman problem.
10. Write a program for Hamiltonian cycle problem.

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BTIBM612N	**DSE**	**Microservices Architecture and Implementation**	60	20	20	30	20	2	0	2	3

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Course Objectives:
Students will acquire knowledge on:

1 Understand the importance of Microservices and describe its need as an Architecture Implementation.
2 Understand strengthen the understanding of basic concepts of Docker and Kubernetess.
3 Understand the Html and its Tags
4 Understand CSS and how we implement in html
5 Be able to Deploy application on docker and Access the Kubernetess

Course Outcomes:
At the end of the mobility period, students will be able to:

1 Make an application using nodejs
2 Run docker commands
3 Deploy container and pods on kubernets.

Syllabus:

UNIT–I

CSS and Java Script:
Understand JavaScript and DOM and BOM , Understand Server side Application, Understand NoSQL (MongoDb), Deployment of Nodejs application

UNIT–II

Server side nodejs:-Key features of NodeJS, Installation and Configuration, NodeJS Command Line, Sample Project using Node Express command prompt, Nodeclipse plugin, Sample Project using Nodeclipse, Performing CRUD Operations,Key features of MongoDB, Connection Pooling using NodeJS Mongo driver,Dockerarchitecture,Virtual machines versus containers, about containers.

UNIT–III

Docker: A shipping container for code, Benefits of using containers, Docker basic concepts, Docker shared and layered file systems technology. Deployment of container, Learn the concept of kubernetes, Learn how to run Docker command, Understand pods and cluster Container ecosystem,

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BTIBM612N	**DSE**	**Microservices Architecture and Implementation**	60	20	20	30	20	2	0	2	3

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UNIT–IV

Kubernetess, Container, orchestration, Kubernetess architecture, Master Node Components, Worker Node Components, Kubernetess Building Blocks, Images, Immutability, Pod, Config Maps & Secrets, Deploying Applications on Kubernetess, Pod Health Checking, Kubectl Commands

UNIT–V

Cloud Application Component Architecture, Benefits of using Kubernetess with IBM Containers, About Microservices, monolithic application, microservice security, api management and gateways, the future of microservices, microservices governance.

TEXTBOOK:

1. Sam Newman," Building Microservices", O'Reilly Media

REFERENCE BOOKS:

1. Eberhard Wolff ,"Microservices — A Practical Guide", Korean translation
2. Martin Kleppmann ,"Designing Data-Intensive Applications", O'Reilly Media
3. Ajay Sharma,"Microservices Architecture", Kindle Edition
4. IBM Career education Microservices Architecture and Implementation

VIDEO LECTURES

1. https://www.youtube.com/watch?v=dD2EISBDjWM&list=PLr6-GrHUlVf_ZNmuQSXdS197Oyr1L9sPB
2. https://www.youtube.com/watch?v=0afZj1G0BIE&t=38s
3. https://www.youtube.com/watch?v=Ukg_U3CnJWI&t=15s
4. https://www.youtube.com/watch?v=TlB_eWDSMt4
5. https://www.youtube.com/watch?v=voDummz1gO0
6. https://www.youtube.com/watch?v=lktzQrHQcYU
7. https://www.youtube.com/watch?v=I4zWlW93-V4

Chairperson	Chairperson	Controller of Examination	Joint Registrar
Board of Studies	Faculty of Studies	Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth
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B.Tech. (CSE-Data Science-IBM)
Choice Based Credit System (CBCS)-2023-27
SEMESTER-IV

COURSE CODE	CATE GORY	COURSE NAME	TEACHING & EVALUATION SCHEME					L	T	P	CREDITS
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTIBM612N	**DSE**	**Microservices Architecture and Implementation**	60	20	20	30	20	2	0	2	3

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SUGGESTED LIST OF EXPERIMENTS:

1. Design a static web application using html and CSS.
2. Wap program to define variable , control structure in JavaScript
3. Define Function in JavaScript and understand message and link.
4. Wap for window in JavaScript and its objects. Create a gauge report and a pie chart repor
5. Design application using nodejs and configure node-eclipse.
6. Connectivity with mongo DB nodejs app
7. Docker Commands
   a. Listing Running Containers
   b. Restarting Stopped Containers
   c. Retrieving Log Outputs
   d. Container Isolation
   e. Creating Docker Images
   f. Building a Dockerfile
   g. Copying Build Files
   h. Kubernetesss Cluster Demo
8. VM Creation in Google Cloud Platform – Demo
9. Minikube on local machine

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BTIT507N	SEC	**Programming with Python**	0	0	0	60	40	0	0	2	4

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Course Objectives:

1. To develop proficiency in creating based applications using the Python Programming Language.
2. To be able to understand the various data structures available in Python programming language and apply them in solving computational problems.
3. To be able to do testing and debugging of code written in Python.
4. To be able to draw various kinds of plots using PyLab.
5. To be able to use generators for generating series like fibonacci.

Course Outcomes:

Upon completion of this course, the student will be able apply technical knowledge and perform specific technical skills, including:

1. Ability to create robust applications using the Python programming language.
2. Ability to test and debug applications written using the Python programming language.
3. Ability to create applications for solving computational problems using the Python Programming Language.

SYLLABUS

UNIT–I

Introduction to Python: The basic elements of Python, Branching programs, Strings and Input, Iteration. Functions, Scoping and Abstraction: Functions and Scoping, Specifications, Recursion, Global variables, Modules, Files.

UNIT–II

Testing and Debugging: Testing, Debugging. Structured Types, Mutability and Higher order Functions: Tuples, Lists and Mutability, Functions as Objects, Strings, Tuples and Lists, Dictionaries.

UNIT–III

Exceptions and assertions: Handling exceptions, Exceptions as a control flow mechanism, Assertions. Classes and Object oriented Programming: Abstract Data Types and Classes, Inheritance, Encapsulation and information hiding.

UNIT–IV

Some simple Algorithms and Data Structures: Search Algorithms, Sorting Algorithms, Hashtables. Plotting and more about Classes: Plotting using PyLab, Plotting mortgages and extended examples.

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UNIT–V

Dynamic Programming: Fibonacci sequence revisited, Dynamic programming and the 0/1 Knapsack algorithm, Dynamic programming and divide and conquer.

Text Book:

1. John V Guttag. “Introduction to Computation and Programming Using Python”, Prentice Hall of India

Reference Book:

1. Python Essential Reference, 4th Edition Addison-Wesley Professional.
2. Mark Lutz "Programming Python: Powerful Object-Oriented Programming "David Beazley "Python Cookbook" Third edition, O'Reilly Media
3. Allen Downey, Jeffrey Elkner and Chris Meyers "How to think like a Computer Scientist, Learning with Python", Green Tea Press.
4. Mark Lutz "Learning Python" O'Reilly Media; 5 edition.
5. David Beazley "Python Cookbook, Third edition" O'Reilly Media

Project/Participation in Class, given that no component shall exceed more than 10 marks.

SUGGESTED LIST OF EXPERIMENTS:

1. Write a Python Program to Print Hello world!
2. Write a Program to Add Two Numbers.
3. Write a Program to Find the Square Root.
4. Write a Program to Calculate the Area of a Triangle.
5. Write a Program to Solve Quadratic Equation.
6. Write a Program to Swap Two Variables.
7. Write a Program to Generate a Random Number.
8. Write a Program to Convert Kilometers to Miles.
9. Write a Program to Convert Celsius To Fahrenheit.
10. Write a Program to check if a number is positive, negative or zero.
11. Write a Program to Check if a Number is Odd or Even.
12. Write a Program to Check Leap Year.
13. Write a Program to Find the Largest Among Three Numbers.
14. Write a Program to Check Prime Number.

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15. Write a Program to Print all Prime Numbers in an Interval.
16. Write a Program to Find the Factorial of a Number.
17. Write a Program to Display the multiplication Table.
18. Write a Program to Print the Fibonacci sequence.
19. Write an English sentence with understandable semantics but incorrect syntax. Write another English sentence which has correct syntax but has semantic errors.
20. Create a program that prompts the user for several gallons of gasoline. Reprint that value along with its conversion equivalent number of liters.
21. Write a program that allows a user to enter his or her two favourite foods. The program should then print out the name of a new food by joining the original food names together.
22. Write a Tipper program where the user enters a restaurant bill total. The program should then display two amounts: a 15 percent tip and a 20 percent tip.
23. Write a Car Salesman program where the user enters the base price of a car. The program should add on a bunch of extra fees such as tax, license, dealer prep, and destination.
24. charge. Make tax and license a percent of the base price. The other fees should be set
25. values. Display the actual price of the car once all the extras are applied.
26. Create a program with a function that calculates the area of a circle by taking a radius from the user.
27. Write your own sum function called my Sum that takes a list as a parameter and returns the accumulative sum.