Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MCA101	AEC	Programming with C Language	3	0	4	5	60	20	20	30	20

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/Assignment/Attendance, MST - Mid Sem Test.

*Teacher Assessment shall be based on following components:
Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Educational Objectives (CEOs):
- To familiarize the students with programming and to encourage them to develop their logic.
- To make students well versed with C language to solve problems efficiently.
- Using simple and well drawn illustrations develop their programming skills using modular programming.
- To make the students well versed with the knowledge of pointer and structure.

Course Outcomes (COs): Students will be able to:
- Develop algorithms for problems.
- Apply the programming concepts to solve the given problems.
- Write the programs using modular programming.
- Write the programs using pointers and to manage memory.

Unit I:

Concept of problem solving, Problem definition, Flowcharting, Decision table, Algorithm. Characteristics of a good program - accuracy, simplicity, robustness, portability, minimum resource and time requirement, modularization; Categories of Programming Languages, Programming Paradigms: monolithic, Procedural, structured, Non Procedural. Type of errors in programming.

UNIT II:
Overview of C: Features of C, Structure of C program. Elements of C: C character set, identifiers and keywords, data types: primitive and user defined. Operators and Expressions, Type modifiers and type casting. Control Structures. Input/ Output: Unformatted and Formatted I/O functions in C.

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teachers Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teachers Assessment*
MCA101	AEC	Programming with C Language	3	0	4	5	60	20	20	30	20

TEACHING & EVALUATION SCHEME

Unit III:

Functions: Definition, prototype, Function call, parameters passing – call by value and call by reference. Return value. Storage Classes in C: auto, extern, register and static, their scope, Recursion, Recursion v/s Iteration, types of recursion. Special constructs – Break, continue, exit(), goto and labels.

Arrays: Definition, Access of Elements, initialization; Multidimensional arrays, character arrays.

Unit IV:

Pointer: address and dereferencing operators, declaration, assignment, initialization. pointer to pointer. pointer and arrays, Array of pointers and its limitation, Function returning pointers; Pointer to function, Function as parameter. Dynamic memory management using functions like malloc(), calloc(), realloc(), free() etc.

Structure: Structure –basic, declaration, membership operator, structure within structure, array in structure, array of structure.

Unit V:

Pre-processor directives: #include, #define, #undef, #if, #ifdef, #ifndef, #else, #elif, #endif, #error, #pragma. Predefined macros. Command line arguments. Variable argument list functions.

Chairperson	**Chairperson**	**Controller of Examinations**	**Registrar**
Board of Studies	**Faculty of Studies**	**Shri Vaishnav Vidyapeeth**	**Shri Vaishnav Vidyapeeth**
Shri Vaishnav Vidyapeeth	**Shri Vaishnav Vidyapeeth**	**Vishwavidyalaya, Indroe**	**Vishwavidyalaya, Indroe**
Vishwavidyalaya, Indore	**Vishwavidyalaya, Indore**		

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MCA101	**AEC**	Programming with C Language	3	0	4	5	60	20	20	30	20

List of Experiments:

1. Define an algorithm and flowchart. Draw algorithm and flow chart for a program that converts an input Fahrenheit degree into Celsius equivalent.

2. Write an algorithm and a C program to find the greatest among three numbers.

3. WAP to print an input string in lower case, upper case and mixed case using library function.

4. WAP a C program to reserve an input number.

5. Draw a flow chart to find prime number from 1 to 100.

6. Write a C program to obtain the sum of first n terms of the following series: $X - X^3/3! + X^5/5! - X^7/7! + \ldots$

7. WAP to calculate factorial of a number using different loops.

8. WAP to calculate factorial of a number using recursion.

9. WAP in C to generate Fibonacci series.

10. WAP in C to generate Pascal triangle.

11. WAP in C to swap value and address of two variables.

12. WAP in C to search a given element in an array using linear and binary search.

13. WAP to sort an integer array in ascending and descending order according to user's choice.

14. Write a menu driven program to perform matrix addition, subtraction and multiplication.

15. Write a program to sum diagonal elements of two matrices.

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MCA101	**AEC**	Programming with C Language	3	0	4	5	60	20	20	30	20

16. WAP a C program to reverse a string by recursion.

17. WAP using structure in C to generate student mark-sheet for 3 students with student details name, course, and semester and with marks in 5 subjects, assume max mark in each subject as 100 and passing marks as 35.

Text Books:

1. Kanitkar Yashwant, Let us C", Edition 16th 2017, BPB, New-Delhi.
2. Balaguruswami, Ansi C, McGraw Hill Education; Eighth edition 2019,TMH, New-Delhi.
3. Kerninghan & Ritchie "The C programming language", Pearson Education India; 2 edition (2015), PHI.
4. Schildt "C:The Complete reference" McGraw Hill Education; 4th ed TMH, 2017.
5. Byron S. Gottfried, "Programming with C", Schaum's Outline Series Mcgraw –Hill, II-Ed.
6. Concepts of Programming Languages Robert .W. Sebesta 8/e, Pearson Education, 2008.
7. Programming Language Design Concepts, D. A. Watt, Wiley dreamtech,rp-2007.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teacher Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teacher Assessment*
MCA102N	DCC	Python for AI-ML	3	0	2	4	60	20	20	30	20

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical;   C - Credit; Q/A – Quiz/Assignment/Attendance, MST - Mid Sem Test.

*Teacher Assessment shall be based on following components:
Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Objectives: The objective of this course is to provide students

- an understanding of basic principles of Python Programming.
- an understanding of coding rules and develop logics.
- a basic understanding on OOPS concepts and data handling.

Course Outcomes: After completion of this syllabus students will be able

- Apply the principles python programming.
- Write clear and effective python code.
- Create applications using python programming.
- Apply Object oriented programming concepts.
- Apply file management and data handling.

UNIT - I : Introduction
Basic Concept of python, its characteristics, Features, Names of popular application in python, various flavours of python, limitations of python, versions of python, Python-2 and Python-3 differences. Identifiers, keywords, datatypes, use of comments in python, variables and constants, various operators used in python.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teacher Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teacher Assessment*
MCA102N	DCC	Python for AI-ML	3	0	2	4	60	20	20	30	20

UNIT – II: **Input-output and Conditional statements**
Input and output statements and basic simple programs using it. Decision Making statements: if statement, if-else statement and nested if statement. Iterative and Transfer Statements: Iterative statements: For Loop, While loop, nested loops. Transfer statement: break and continue statement.

UNIT – III Strings Used in Python Programming
Definition, accessing characters or values of a String, Updating Strings, String Special Operators, String Formatting Operator. List, Tuples, Functions, Introductory concept of Python Lists and Python Tuples, list Vs tuples, Basic concept of python functions.

UNIT-IV Python File Handling and user defined functions
concept and types of files used in Python Programming language. Operations like opening and closing a file with various modes, deleting a file. User defined Functions and Modules in Python.

UNIT-V Introduction of Python OOPs Concepts
Introduction of Class and Object, creating class and its instance, constructor (Parameterized Constructor and Non-Parameterized Constructor), destructors, polymorphism, inheritance (Multilevel and multiple), definition of data abstraction.

Chairperson
Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson
Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indroe

Registrar
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indroe

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teacher Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teacher Assessment*
MCA102N	DCC	Python for AI-ML	3	0	2	4	60	20	20	30	20

List of Practical:

1. Write python program to print Hello World.

2. Write a program to perform different Arithmetic Operations on numbers in Python.

3. Write python program to Hello World using string variable.

4. Write python program to show use of conditional statement.

5. Write a python program to find largest of three numbers.

6. Write a Python program to convert temperatures to and from Celsius, Fahrenheit.

[Formula : c = (f-32)/1.8]

7. Write python program to store data in list and then try to print them.

8. Write python program to print list of numbers using for loop.

9. Write a python program to find factorial of a number using loop.

10. Write python program to store strings in list and then print them.

11. Write a program to create, append, and remove lists in python.

12. Write a program to demonstrate working with tuples in python.

13. Write a program to demonstrate working with dictionaries in python.

14. Write python program to let user enter some data in string and then verify data and print welcome to user.

Chairperson	Chairperson	Controller of Examinations	Registrar
Board of Studies	Faculty of Studies	Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth
Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth	Vishwavidyalaya, Indroe	Vishwavidyalaya, Indroe
Vishwavidyalaya, Indore	Vishwavidyalaya, Indore		

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

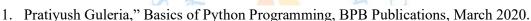| COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teacher Assessment*	END SEM University Exam	Teacher Assessment*
MCA102N	DCC	Python for AI-ML	3	0	2	4	60	20	20	30	20

15. Write python program in which a function is defined and calling that functionprints Hello World.

16. Write python program in which a function(with single string parameter) isdefined and calling that function prints the string parameters given to function.

17. Write python program in which a class is define, then create object of that class and call simple print function define in class.

18. Write a python program to define a module to find Fibonacci Numbers and import the module to another program.

19. Write a python program to define a module and import a specific function in that module to another program.

20. Write a script named copyfile.py. This script should prompt the user for the names of two text files. The contents of the first file should be input and written to the second file.

21. Write a program that inputs a text file. The program should print all of the unique words in the file in alphabetical order.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teacher Assessment*	END SEM University Exam	Teacher Assessment*
MCA102N	DCC	Python for AI-ML	3	0	2	4	60	20	20	30	20

Text Books:

1. Pratiyush Guleria," Basics of Python Programming, BPB Publications, March 2020.
2. Jason Cannon" Python programming for beginners, Kindle book, 2020
3. Paul Deitel and Harvey Deitel, "Python for Programmers with Big Data and Artificial Intelligence Case Studies" Deitel Developer Series, April 2019.
4. Ryan Turner, "Python Programming: 3 Books in 1: Ultimate Beginner"s, Intermediate & Advanced Guide to Learn Python Step-by-Step", Kindle Edition, 2018.
5. Martin Brown, "Python: The Complete Reference", Mc-Graw-Hill, 2018.

Chairperson	**Chairperson**	**Controller of Examinations**	**Registrar**
Board of Studies	**Faculty of Studies**	**Shri Vaishnav Vidyapeeth**	**Shri Vaishnav Vidyapeeth**
Shri Vaishnav Vidyapeeth	**Shri Vaishnav Vidyapeeth**	**Vishwavidyalaya, Indroe**	**Vishwavidyalaya, Indroe**
Vishwavidyalaya, Indore	**Vishwavidyalaya, Indore**		

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teacher Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teacher Assessment*
MCA103	SEC	Internet Web Programming	3	0	4	5	60	20	20	30	20

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical;   C - Credit;
Q/A – Quiz/Assignment/Attendance, MST - Mid Sem Test.
*Teacher Assessment shall be based on following components:
Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Objectives:
- Provide an introduction to the fundamental concepts of HTML, CSS, XML, Javascript
- Learn CSS Grid Layout
- Develop basic programming skills using Javascript
- Develop skills in analyzing the usability of a website.
- Understand the principles of creating an effective Web Page.

Course Outcomes:
After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes:
- Define the principle of Web page design.
- Define the basics of Javascript.
- Visualize the basic concept of HTML.
- Recognize the elements of HTML.
- Introduce basics concept of CSS.
- Develop the concept of XML, XSLT, DTD and XPath.

UNIT - I
Java Methodology: Classes, Objects, Method, Inheritance, Packages, Abstract Classes, Interfaces, Exception Handling, A brief introduction to Applets.

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teacher Assessment*	END SEM University Exam	Teacher Assessment*
MCA103	SEC	Internet Web Programming	3	0	4	5	60	20	20	30	20

UNIT – II
HTML: Introduction to HTML, HTML Documents structure tags, Text Formatting Tags, Inserting Special Characters, Anchor Tags, List Tags, Tables, Frames and Floating Frames, Developing Forms, Adding Images and Sound.

UNIT – III
CSS: Concept of CSS, Creating Style Sheet, CSS Properties, CSS Styling (Background, Text Format, Controlling Fonts), Working with block elements and objects,Working with Lists and Tables.

UNIT-IV
XML: Creating XML documents, overview of working with elements and attributes

UNIT-V
Javascript: Introduction to Javascript, Identifier and Operator, Control Structure, Functions DOM, Numbers and String Functions, Arrays and Event handling in Javascript, Bootstrapping.

List of Practical:
1.Develop a webpage using Form tag.
2.Develop a webpage using different HTML tags.
3.Develop a webpage using Table tag.
4.Develop a webpage using Frame tag.
5.Develop a static website using HTML tags.
6.Creating XML documents.
7.Creating DTD to validate XML documents.
8.Creating XSLT Stylesheet for formatting data.
9.Develop a Javascript Form.
10.Creating a Javascript POPUP Message.
11.Change Link colors using CSS
12.Create a TextBox using CSS
13. Center-Align elements using CSS

Chairperson	Chairperson	Controller of Examinations	Registrar
Board of Studies	Faculty of Studies	Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth
Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth	Vishwavidyalaya, Indroe	Vishwavidyalaya, Indroe
Vishwavidyalaya, Indore	Vishwavidyalaya, Indore		

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teacher Assessment*	END SEM University Exam	Teacher Assessment*
MCA103	SEC	Internet Web Programming	3	0	4	5	60	20	20	30	20

14 .Adjust padding using CSS
15.Make a Link Button using CSS

Text Books:
1. Jennifer Robbins ,"Learning Web Design:A beginner's guide to HTML, CSS, Javascript and Web Graphics", 5th Edition,Oreilly,2018
2. Doug Tidwell, "XSLT: Mastering XML Transformations",2nd Edition, Oreilly, June 2009
3. Jon Duckett,"Javascript and Jquery:Interactive Front-End Web Development",1stEdition,Wiley,July 2014

Reference Books:
1. Craig Granell ,"The Essential Guide to CSS and HTML Web Design", 3thEdition,Apress,March 2008
2. Jon Duckett, "HTML and CSS:Design and Build Websites", 1st Edition, Wiley, November 2011
3. Michael Kay," XSLT Programmer's Reference",Wrox Press Ltd, 1 April 2000.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MCA203	DCC	Database Management Systems	3	0	2	4	60	20	20	30	20

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/Assignment/Attendance, MST - Mid Sem Test.

*Teacher Assessment shall be based on following components: Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Objectives:
- To provide students with basic concepts in information system and the benefits of these systems
- To provide the knowledge of systems definition, systems requirements and information needed by the decision maker
- To understand the role, requirement and operations that an analyst needed to analyze, design, and implement the systems
- To identify several methods to enhance and develop information systems and to manage the information system recourses
- To explain several ethical issues in information system
- To provide the knowledge of business data modeling for the designing of efficient information systems
- To explain the various issues related with Data Security.

Course Outcomes: After completing this course the student will be able to:
- To differentiate between data, information, and knowledge
- Create, maintain and manipulate a relational database using SQL
- Design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing an information system
- Describe the characteristics of database transactions
- Understand the transaction processing system and functional area information system
- To design the efficient database system using normalization
- Define the information systems and differentiate information systems Identify the threats to information security and to protect information recourses

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MCA203	DCC	Database Management Systems	3	0	2	4	60	20	20	30	20

- Analyze the basic concepts and architecture associated with DBMS
- To analyze any environment to determine their tables to construct database
- Information systems that support organization, management, Decision making
- To plan, acquire, and maintain information systems.

UNIT-I
Introduction: Introduction to Databases and Transactions, Purpose of Database System- Database System, Database system Vs file system, Database System concepts and architecture, Advantage of DBMS approach, various view of data, data independence, schema and subschema and instances, primary Database languages, Database administrator and users, data dictionary.

UNIT-II
Concepts of data models, **ER model:** basic concepts, notation for ER diagram, design issues, mapping constraint, Concepts of keys: super, candidate, primary, alternate, foreign, weak and strong entity sets, specialization and generalization, aggregation, inheritance, design of ER schema, reduction of ER schema to tables, reduction of ER diagrams to tables, extended ER model, relationships of higher degree.

Unit III
Relational data Model and Language:
Relational Algebra: concepts, domains, relations, kind of relations, relational database, integrity constraints: entity integrity, referential integrity, Keys constraints, Domain constraints, The structure, relational algebra with extended operations, modifications of Database.

Relational Calculus: idea of relational calculus, tuple and domain calculus, Domain relational Calculus, calculus Vs algebra, computational capabilities.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MCA203	DCC	Database Management Systems	3	0	2	4	60	20	20	30	20

Unit IV

Relational Database Design: basic concepts and definitions, trivial and non-trivial dependencies, closure set of dependencies and of attributes, irreducible set of dependencies, Canonical Cover.

Normalization: Introduction, non-loss decomposition, FD diagram, first, second, third Normal forms, dependency preservation, BCNF, multi valued dependencies and fourth normal form, Join dependency and fifth normal form. Codd's rules, Relational Schemas, Introduction to UML, Alternative approaches to database design.

UNIT-V

SQL: Introduction, basic structure of SQL, Characteristics and Advantage of SQL set operations, aggregate functions, null values, SQL data types and literals. SQL operators, Types of SQL commands. Nested sub queries, derived relations, modification of Database, Aggregate functions. Insert, update and delete operations. Triggers in SQL.

Views: Introduction to views, data independence, security, updates on views, comparison between tables and views

Distributed Database: basic idea, distributed data storage.

Concepts of **Transaction, concurrency and Recovery:** basic concepts, ACID properties, Transaction states, Implementation of atomicity and durability, concurrent executions.

List of Experiments:

1. To study Basic SQL commands (create database, create table, use, drop, insert) and execute the following queries using these commands:
   - Create a database named ' Employee'.
   - Use the database 'Employee' and create a table 'Emp' with attributes 'ename', ecity', 'salary', 'enumber','eaddress','depttname'.

Chairperson   **Chairperson**   **Controller of Examinations**   **Registrar**

Board of Studies   **Faculty of Studies**   **Shri Vaishnav Vidyapeeth**   **Shri Vaishnav Vidyapeeth**

Shri Vaishnav Vidyapeeth   **Shri Vaishnav Vidyapeeth**   **Vishwavidyalaya, Indroe**   **Vishwavidyalaya, Indroe**

Vishwavidyalaya, Indore   **Vishwavidyalaya, Indore**

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teachers Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teachers Assessment*
							TEACHING & EVALUATION SCHEME				
MCA203	DCC	Database Management Systems	3	0	2	4	60	20	20	30	20

- Create another table 'Company' with attributes 'cname', ccity','empnumber' in the database 'Employee".

2 To study the viewing commands (select , update) and execute the following queries using these commands:
- Find the names of all employees who live in Delhi.
- Increase the salary of all employees by Rs. 5,000.
- Find the company names where the number of employees is greater than 10,000.
- Change the Company City to Gurgaon where the Company name is 'TCS'.

3. To study the commands to modify the structure of table (alter, delete) and execute the following queries using these commands:
- Add an attribute named ' Designation' to the table 'Emp'.
- Modify the table 'Emp', Change the datatype of 'salary' attribute to float.
- Drop the attribute 'depttname' from the table 'emp'.
- Delete the entries from the table ' Company' where the number of employees are less than 500.

4. To use (and, or, in , not in, between , not between , like , not like) in compound conditions and execute the following queries using them:
- Find the names of all employees who live in 'Gurgaon' and whose salary is between Rs. 20,000 and Rs. 30,000.
- Find the names of all employees whose names begin with either letter 'A' or 'B'.
- Find the company names where the company city is 'Delhi' and the number of employees is not between 5000 and 10,000.
- Find the names of all companies that do not end with letter 'A'.

5. Using aggregate functions execute the following queries:
- Find the sum and average of salaries of all employees in computer science department.
- Find the number of all employees who live in Delhi.
- Find the maximum and the minimum salary in the HR department.

Chairperson	**Chairperson**	**Controller of Examinations**	**Registrar**
Board of Studies	**Faculty of Studies**	**Shri Vaishnav Vidyapeeth**	**Shri Vaishnav Vidyapeeth**
Shri Vaishnav Vidyapeeth	**Shri Vaishnav Vidyapeeth**	**Vishwavidyalaya, Indroe**	**Vishwavidyalaya, Indroe**
Vishwavidyalaya, Indore	**Vishwavidyalaya, Indore**		

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MCA203	DCC	Database Management Systems	3	0	2	4	60	20	20	30	20

6. To execute the following queries using study the grouping commands (group by, order by)

List all employee names in descending order.
- Find number of employees in each department where number of employees is greater than 5.
- List all the department names where average salary of a department is Rs.10,000.

7. To write SQL queries
  Alter table 'Emp' and make 'enumber' as the primary key.
- Alter table 'Company' and add the foreign key constraint.
- Add a check constraint in the table 'Emp' such that salary has the value between 0 and Rs.1,00,000.
- Alter table 'Company' and add unique constraint to column cname.
- Add a default constraint to column ccity of table company with the value 'Delhi'.
- Rename the name of database to 'Employee1'.
- Rename the name of table 'Emp' to 'Emp1'.
- Change the name of the attribute 'ename' to 'empname'.

8. To execute following queries using appropriate
  Retrieve the complete record of an employee and its company from both the table using joins.
- List all the employees working in the company 'TCS'.

9. To study the various set operations and execute the following queries using these commands:
- List the enumber of all employees who live in Delhi and whose company is in Gurgaon or if both conditions are true.
- List the enumber of all employees who live in Delhi but whose company is not in Gurgaon.

10. To study the various scalar functions and string functions (power, square, substring, reverse, upper, lower, concatenation) and execute the following queries using these commands:
- Reverse the names of all employees.
- Change the names of company cities to uppercase.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
MCA203	DCC	Database Management Systems	3	0	2	4	60	20	20	30	20

- Concatenate name and city of the employee.

11. To study the commands for views and execute the following queries using these commands:
    - Create a view having ename and ecity.
    - In the above view change the ecity to 'Delhi' where ename is 'John'.
    - Create a view having attributes from both the tables.
    - Update the above view and increase the salary of all employees of IT department by Rs.1000.

12. To study the commands involving indexes and executes the following queries:
    - Create an index with attribute ename on the table employee.
    - Create a composite index with attributes cname and ccity on table, company.
    - Drop all indexes created on table,company.

Text Books:
1. A Silberschatz, H.F Korth, Sudersan, "Database System Concepts", 6th Edition, MGH Publication 2013.
2. C.J. Date, "An introduction to Database Systems", 6th Edition, Pearson 2003.
3. Elmasri & Navathe, "Fundamentals of Database systems",7th Edition, Pearson 2015.
4. B.C. Desai, "An introduction to Database systems", BPB.
5. Raghu Ramakrishnan, "Database Management Systems",3rd Edition, TMH 2014.

Chairperson	Chairperson	Controller of Examinations	Registrar
Board of Studies	Faculty of Studies	Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth
Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth	Vishwavidyalaya, Indroe	Vishwavidyalaya, Indroe
Vishwavidyalaya, Indore	Vishwavidyalaya, Indore		

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teacher Assessment*	END SEM University Exam	Teacher Assessment*
HUPG101	AEC	Technical Communication and Soft Skills	3	1	0	4	60	20	20	0	0

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 students will be able to:

- Enable them communicate their ideas relevantly and coherently in speaking and writing.
- Understand the nuances of technical communication.

Course Outcomes (COs): The students should be able to:

- Use language accurately, fluently and appropriately.
- write project reports, reviews and resumes
- Exhibit advanced skills of interview, debating and discussion.

COURSECONTENTS:

UNIT I

Fundamentals of Technical Communication: Technical Communication: Features; Distinction between General and Technical Communication; Language as a tool of Communication; Dimensions of Communication: Technical writing: Paragraph writing; The flow of Communication: Downward; upward, Lateral or Horizontal; Barriers to Communication.

UNIT II

Forms of Technical Communication: Technical Report: Technical Report v/s General Report ; Speech: Introduction & Summarization; 7 Cs of effective business writing: concreteness, completeness, clarity, conciseness, courtesy, correctness, consideration. Skills and sub skills of LSRW.

Chairperson	Chairperson	Controller of Examinations	Registrar
Board of Studies	Faculty of Studies	Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth
Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth	Vishwavidyalaya, Indroe	Vishwavidyalaya, Indroe
Vishwavidyalaya, Indore	Vishwavidyalaya, Indore		

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of the Program: MCA (Artificial Intelligence and Machine Learning)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teacher Assessment*	END SEM University Exam	Teacher Assessment*
HUPG101	AEC	Technical Communication and Soft Skills	3	1	0	4	60	20	20	0	0

UNIT III

Technical Presentation: Strategies & Techniques Presentation: Forms; interpersonal Communication; Class room presentation; style; method; Public Speaking: method; Techniques: Clarity of substance; emotion; Modes of Presentation; Overcoming Stage Fear: Confident speaking; Audience Analysis & retention of audience interest; Methods of Presentation, Areas for an effective presentation.

UNIT IV

Technical Communication Skills: Resume writing – CV – structural differences, structure and presentation, planning, defining the career objective Interview Skills – formal & informal interviews, concept and process, pre-interview planning, opening strategies, answering strategies, interview through tele and video-conferencing, Group Discussion – dynamics of group discussion.

UNIT V

Soft Skills: An Introduction–Definition and Significance of Soft Skills; Process, Importance and Measurement of Soft Skill Development, Time Management–Concept, Essentials, Tips. Decision-Making, Conflict Management: Conflict-Definition, Nature, Types and Causes; Methods of Conflict Resolution.

Suggested Readings
- Simon Sweeny, "English for Business Communication", CUP,First South Asian Edition, 2010.
- Ashraf Rizvi, "Effective Technical Communication", TataMcGraw-Hill Publishing Company Ltd. 2005.
- Sunita Mishra & C. Muralikrishna, "Communication Skills forEngineers", Pearson Education, 2007.
- Meenakshi Raman &Sangeeta Sharma, "TechnicalCommunication", Oxford University Press, 2011.
- R.C. Sharma, Krishna Mohan, "Business Correspondence and Report writing", 4th Edition, Tata Mcgraw-Hill Publishing Co.Ltd., 2010.

Chairperson	**Chairperson**	**Controller of Examinations**	**Registrar**
Board of Studies	**Faculty of Studies**	**Shri Vaishnav Vidyapeeth**	**Shri Vaishnav Vidyapeeth**
Shri Vaishnav Vidyapeeth	**Shri Vaishnav Vidyapeeth**	**Vishwavidyalaya, Indroe**	**Vishwavidyalaya, Indroe**
Vishwavidyalaya, Indore	**Vishwavidyalaya, Indore**		