BHAVAN'S BHAGWANDAS PUROHIT VIDYA MANDIR

CURRICULUM PLAN (2023-2024)
STD. XII (COMPUTER SCIENCE)

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BHAVAN'S BHAGWANDAS PUROHIT VIDYA MANDIR, NAGPUR

CURRICULUM PLAN (2023 - 2024)

SUBJECT :- Computer Science (083)

STD :- XII

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	ACTIVITIES / ASSIGNMENT	LEARNING OUTCOMES / SDG's / SKILLS TO BE DEVELOPED
Apr-23	06 - 08	3	Python Revision Tour I	Introduction, Tokens, Barebones of Python Program, Variables, Simple input and output	Simple Programs based on input and output	Students will be able to understand : * Concepts of Flow of Control * Concepts of Python Programs **Learning Skill : Crcitical thinking**
	10 - 15	5		Data types, Expressions, Flow of Control.	Programs based on flow of control and Python Data Types.	
	17 - 21	5	Python Revision Tour II	Random module , Strings	Simple programs and output finding on strings and random numbers.	
	24 - 29	6		Lists , Tuples	Programs, Output/Error Finding on List & Tuples.	Students will be able : To understand Sequences and Mapping data type in Python.
May-23	2 - 4	3	Python Revision Tour II	Dictionaries in Python.	Programs, Output/Error Finding on Dictionaries.	Students will be able to understand the **Learning Skill : Critical thinking and creativity skill**
June-2023	20 - 24	5	Working with Functions	Types of function (built-in functions, functions defined in module, user defined functions), creating user defined function	Program based on Functions Output / Error finding programs.	Students should be able to enhance the : * Concept of Functions in Python * Argument Passing to Functions.
	26 - 30	4		Arguments and parameters, default parameters, positional parameters, function returning value(s)		
	1, 3 - 8	6	Working with Functions	Flow of execution, scope of a variable (global scope, local scope)	Demonstration on Scope of variable	To make students familier with scope of variable. **Learning Skill : Critical thinking.** **Literacy Skill : Technology Skill**
July-2023	10 - 15	6	Exception Handling	Introduction, handling exceptions using try-except-finally blocks	Programs based on try-except-finally blocks	Students will be able to understand the concept of exception handling.

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July-2023	17 - 22	6	File Handling	Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths, Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause	Program based on Creation, reading ,writing and appending using text file	* Student is able to develop small applications involving creation and manipulation of text files. * Student is able appreciate the need and usage of different file modes and functions used for creating and manipulating text.
	24 - 28, 31	6	File Handling	writing/appending data to a text file using write() and writelines(), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file	Programs based on seek and tell methods	Learning Skill : Critical thinking. Literacy Skill : Information Literacy
Periodic Test - I (7th August - 2023) Portion : Revision Tour 1 & 2, Working with Functions						
Aug-2023	1 - 5	5	File Handling	Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method	Program based on Creation, reading ,writing, appending, searching and updating binary files.	* Student will be able to develop applications involving creation,appending, searching and updating binary files.
	7 - 12	5	File Handling	read, write/create, search, append and update operations in a binary file		
	14, 17 - 19	4	File Handling	CSV file: import csv module, open / close csv file, write into a csv file using writer(),writerow(),writerows() and read from a csv file using reader()	Program based on Creation, reading and writing using csv files	Student will be able to unerstand the usage of csv files in Python. Learning Skill : Critical thinking and creativity skill

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Aug-2023	21 - 26	6	Data Structure	Stack, operations on stack (push & pop), implementation of stack using list.	Program to Implement stack using list.	Student will be able implement LIFO principle of data structure.
	28 - 29, 31	3	Relational Database	Database concepts: introduction to database concepts and its need Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key)	Identifying Keys, Degree and Cardinality.	Students will be familiar with the database concepts and its terminologies. **Literacy Skill : Information literacy**
Sept-2023	1 - 2, 4 - 9	8	Table creation and Data Manipulation commands	Creating Database, Creating Tables,Data Types, Inserting Data, DML and DDL Commands.	Creating Tables and Insertion data in tables.	Students should be able to Create SQL tables and insert data using DDL & DML Commands.

(Grouping of Two or Three Students for Final Project in Python and SQL& Submission of Project Synopsis)

Periodic Test - II (11ᵗʰ Sept - 2023)
Portion : Exception Handling, File Handling

Sept-2023	11 - 16	5	Simple Queries in SQL	Making Simple Queries, MySql Functions, Aggregate Function.	Exercise based on SQL Database.	Student is able to understand the syntax of SQL Commands and execute them on SQL prompt and observe outputs.
	18, 20-21, 23	4				**Literacy skill : Media and information literacy.**

Revision of Half Yealy

Art Integrated Activity : Collage making / Presentation / Menu Driven Program - Showing Tourism, Cultural and Traditional Differences, Sports, Food of Maharashtra and Sikkim.

Half Yearly Exam (Sept - 2023)
Portion : Revision Tour 1 & 2, Working with Functions ,Exception Handling, File Handling & Relational Database

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Oct-2023	16-20	6	Grouping Records, Joins in SQL	Having and Group By Clause, Joins Cartesion products, Equi Join and Natural Joins	Theory question based on definitions and drawing flow charts for a given problem and programs based on while loop.	* Student is able to use SQL commands to Filter, sort and search data in a given table based on various criteria's * Student is able to understand group queries in SQL. * Student is able to write and execute SQL commands using aggreagate functions. **Literacy skill : Technology literacy**
	25-28	3	Interface Python with MySQL	Introduction, Connecting to MySQL from Python, Parameterised Queries, Performing Insert operation	Program based on inserting data using Python MySQL connectivity.	Student will be able to understand concept of Python MySQL connectivity.
	30-31	2	Interface Python with MySQL	Update and delete queries using cursor, display data by using fetchone(), fetchall(), rowcount.	Program based on update, delete and search data using fetchone(), fetchall() methods.	Students will be able to connect the database with Python Program. **Life skill : Initiative** **Learning Skill : Collaboration**
Nov-2023	1 - 4	4	Interface Python with MySQL	Creating database connectivity applications, use of % format specifier or format() to perform queries	Program based on Frontend and Backend Connectivity (Python and Mysql)	
	6 - 9	3	Communication and Network Concepts (Part-I)	Types of Network, Evolution, Switching techniques, Data Communication terminologies, Transmission media, Network topologies;Network devices.	Definition of terms based on communication	* Student will be able to understand the concept of network, benefits of networking and different terms associated with networks. * Student will be able to identify different network devices, transmission media and topologies. **Life Skill : Social** **Literacy : Collaboration**
	23 - 25	3				
	28 - 30	3	Communication and Network Concepts (Part-II)	Network Protocols, wireless, Mobile computing, Internet working Terms and Concepts, Protocols,	Abbreviations on networking concepts and Protocols.	Student will be able to identify various network protocols and define terms associated with Internet working concepts.

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	ACTIVITIES / ASSIGNMENT	LEARNING OUTCOMES / SDG's / SKILLS TO BE DEVELOPED
DEC - 2023	1 - 2	2	Communication and Network Concepts (Part-II)	Network Security concepts, Viruses, E-Commerce, Web services.	Case study based questions on Network Security	Student will be able to suggest various methods of Network security. **Learning Skill : Communication Literacy Skill : Media**
	4 - 9	5			Project and Practical Record Completion.	
	11 - 16	6			Revision for Preliminary Exam	

Periodic Test - III (18th Dec - 2023) Portion : Table creation and Data Manipulation commands, Simple Queries in SQL, Grouping Records, Joins in SQL and Computer Networks (Case study Question 5 Marks)

Prelims Exam:- Theory Exam (Dec-2023)
Portion: Full Course
Board Practical Exam :- Jan-Feb 2024

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