DAV PUBLIC SCHOOL, HEHAL, RANCHI .

MONTH WISE SYLLABUS DISTRIBUTION 2025-26

CLASS – XII SUB: COMPUTER SCIENCE WITH PYTHON (083)

MONTH	PORTION
APRIL	**Revision of Python** • Revision of Python topics covered in Class XI. **User Defined functions in Python** • Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function
MAY	**User Defined functions in Python Contd.** • Arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope)
JUNE	**File handling in Python** • Introduction to files, types of files (Text, Binary, CSV), relative and absolute paths • Text file: opening, text file modes (r, r+, w, w+, a, a+), closing a text file, opening file using with clause, writing/appending data 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
JULY	**File handling in Python Contd.** • 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, read, write/create, search, append and update operations in a binary file • CSV file: import csv module, open / close csv file, write into a csv file using csv.writer() and read from a csv file using csv.reader( ) **Data Structure in Python** • Data Structure: Stack, operations on stack (push & pop), implementation of stack using list. • Implementation of stacks for performing PUSH , POP,PEEK and display operation Learning skills – Implementing LIFO data structure
AUGUST	Exception Handling: Introduction, handling exceptions using try-except-finally blocks
SEPTEMBER	**Database Management** • Database concepts: introduction to database concepts • Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate,primary, alternate, foreign, composite) • SQL: Introduction, DDL :data Types , constraints(not null, unique, primary key), create database, use database, show database, drop database, show tables, create table, describe table, alter table (add & remove an attribute, add & remove primary key), drop table .

OCTOBER	**Database Continues……..** **DML Commands :** insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct, where clause, in, between, order • by, meaning of null, is null, is not null, like.update command, delete command, aggregate functions (max, min, avg, sum, count), group by, having clause, joins:Cartesian product on two tables, equi- join and natural join **Computer Networks** • Evolution of networking: computer networks, evolution of networking (ARPANET,NSFNET, INTERNET) • Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuitswitching, Packet switching) • Transmission media: Wired media (Twisted pair, Co-axial, Fiber-optic), Wireless media (Radio waves, Micro waves, Infrared waves) • Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card) • Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree) • Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting
NOVEMBER	**Python MySQL Connectivity** • Interface of python with an SQL database: connecting SQL with Python, performing insert, update,delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications **********