BHAVAN'S BHAGWANDAS PUROHIT VIDYA MANDIR, NAGPUR

CURRICULUM PLANNING

2019-2020

STD: - XII **SUBJECT: -** COMPUTER SCIENCE

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BHAVAN'S BHAGWANDAS PUROHIT VIDYA MANDIR, NAGPUR

CURRICULUM PLAN (2019 - 2020)

SUBJECT :- Computer Science (083)

STD :- XII

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	ACTIVITIES / ASSIGNMENT	LEARNING OUTCOMES
June – 2019	14-22 (06 Days)	9	Python Revision Tour I & II	Introduction, Tokens, Barebones of Python Program, Variables, Simple input and output, Data types, Expressions, Flow of Control. Strings, Lists, Tuples, Dictionaries in Python. Sorting Techniques.	**Assignment No. 1** Simple Programs based on flow of control and Python Data Types.	Students will be able to understand : * Concepts of Flow of Control * Concepts of Python Programs
	24 - 29 (06 Days)	9	Working with Functions	Scope, parameter passing, mutable/immutable properties of data objects, pass arrays to functions, return values.	**Assignment No. 2** Program based on Functions Output / Error finding programs.	Students will enhance the : * Concept of Functions in Python * Argument Passing to Functions.
	Periodic Test - I (24th June - 2019) Portion : Revision Tour 1 & 2, Working with Functions (upto Page No. 97)					
July - 2019	01-06 (06 Days)	9	Using Python Libraries	Functions using libraries: Mathematical, and String functions.	**Assignment No. 3** Theory question based on Libraries. Exercise based on Mathematical and String Functions	Students will be able to detect the Library Files in the Programs. Students will be able to implement the programs by using library files.
	08 -12 (05 Days)	8	File Handling	Open and close a file, read, write, and append to a file.	**Assignment No. 4** Program based on Creation, reading and writing.	* 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 and binary files
	15-20 (6 Days)	9	File Handling	Standard input, output, and error streams, relative and absolute paths..		
	22-27, 29-31 (09 Days)	11	MY SQL Revision Tour	Relational Data Model, Creating and Inserting data into table, Select Command.	**Assignment No. 5** Exercise based on SQL Database.	Student is able to understand the syntax of SQL Commands and execute them on SQL prompt and observe outputs.
	Periodic Test - II (29th July - 2019) Portion : Working with Functions, Using Python Libraries, File Handling, MySQL Revision Tour					

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	ACTIVITIES / ASSIGNMENT	LEARNING OUTCOMES
Aug-2019	1- 3 (03 Days)	4	More on SQL	Order by Clause, Aggregate Functions, Group By Clause.	**Assignment No. 6** 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 aggreagrate functions.
	5 - 9 (05 Days)	7	Interface Python with MySQL	Introduction, Connecting to MySQL from Python, Parameterised Queries, Performing Insert and Update Queries.	**Assignment No. 7** Program based on Frontend and Backend Connectivity.	Students will be able to connect the database with Python Program.
	13 - 16 (03 Days)	4				
	19-23 (05 Days)	7	Creating a Django based on Web Application	Introduction of Django, minimal Django based web application that parses a GET and POST request, and writes the fields to a file - flat file and CSV file.	**Assignment No. 8** Write a minimal Django based web application that parses a GET and POST request, and writes the fields to a file - flat file and CSV file.	Student will be able to create Django based Web Application.
	26-31 (05 Days)	7				
Sept - 2019	3 -5 (03 Days)	4	Computer Network-I	Structure of a network: Types of networks: local area and wide area (web and internet), new technologies such as cloud and IoT, public vs. private cloud, wired and wireless networks; concept of a client and server.	**Assignment No. 9** * Defintion of terms based on communication terminologies,Transmission media. * Abbreviations on networking concepts.	* Student is able to understand the concept of network, benefits of networking and different terms associated with networks. * Student is able to identify different network devices, transmission media and topologies.
	09 - 14 (05 Days)	7		Network devices such as a NIC, switch, hub, router, and access point.		
	16-20 (05 Days)	7	Revision	Revision For Half Yearly Examination	Solving Previous Year Question Papers	Student will be able to solve the Question Paper according to Board Pattern.

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	ACTIVITIES / ASSIGNMENT	LEARNING OUTCOMES
Sept - 2019	**Half Yearly :- Theory Exam (1st October 2019) H.Y. Portion: (Upto Sept-2019) Practical Exam :- 09th Oct to 12th Oct 2019**					
Oct -2019	14-19 (06 Days)	9	Date Structure - I - Linear Lists	Introduction,different data structure, Operations on Data Structure, 2-D lists in Python.	**Assignment No. 9** * Program to Implement stack using list. * Conversion /evaluation of postfix expression * Program to Implement Queue using list. Concept of Circular Queue	Student is able to diffrentiate between list and other data structures. Student will be able implement LIFO and FIFO principles of data structure.
	21-23 (03 Days)	3	Date Structure - II - Stacks and Queues	Introduction, Stack, Implementing Stacks and Queues in Python		
Nov- 2019	1 - 2 (02 Days)	2	Recursion	Introduction, Recursion in Python	**Assignment No. 10** Program Based on Recursion	Students will be able to implement the concept of Recursion in Python Program.
	4 - 8 (05 Days)	6				
	Periodic Test - III (4th November - 2019) Portion : Data Structure-I : Linear List & Data Structure- II: Stacks and Queues					

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MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	ACTIVITIES / ASSIGNMENT	LEARNING OUTCOMES
Nov- 2019	11 - 16 (05 Days)	7	Computer Network-II	Network stack: amplitude and frequency modulation, collision in wireless networks, error checking, and the notion of a MAC address, main idea of routing. IP addresses: (v4 and v6), routing table, router, DNS, and web URLs, TCP: basic idea of retransmission, and rate modulation when there is congestion (analogy to a road network), Protocols: 2G, 3G, 4G, Wi-Fi. What makes a protocol have a higher bandwidth? Basic network tools: traceroute, ping, ipconfig, nslookup, whois, speed-test. □ Application layer: HTTP (basic idea), working of email, secure communication: encryption and certificates (HTTPS), network applications: remote desktop, remote login, HTTP, FTP, SCP, SSH, POP/IMAP, SMTP, VoIP, NFC.	**Assignment No. 11** Theory question based on netwoking devices, Protocols and topologies Application based questions on networking concepts.	* Student is able to suggest network layouts, network devices and topologies, based on given set of criteria. * Student is able to identify various network protocols and define terms associated with Internet working concepts.
	18 - 23 (06 Days)	9				
	25 - 30 (06 Days)	9	Data Visualization using Python	Introduction, Creating Charts with Matplotlib, Customizing the Plot, Comparing Chart Types.	**Assingment No. 12** Theory Question based on Charts. Exercise based on Matplotlib charts.	* Students will be able to design the different types of charts by using Matplotlib.

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MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	ACTIVITIES / ASSIGNMENT	LEARNING OUTCOMES
	2 - 7 (06 Days)	9	Idea of Alogrithmic Efficiency	Introduction, Computational Complexity, Estimating Complexity of Algorithm	Assingment No.13 Finding Best Average and Worst case complexity on various algorithms.	Students will be able to find the Best Average and Worst case complexities.
Dec - 2019	9 - 14 (06 Days)	9	Society, Law and Ethics	Intellectual property rights, plagiarism, digital rights management, and licensing (Creative Commons, GPL and Apache), open source, open data, privacy. □ Privacy laws, fraud; cyber-crime-phishing, illegal downloads, child pornography, scams; cyber forensics, IT Act, 2000. □ Technology and society: understanding of societal issues and cultural changes induced by technology. □ E-waste management: proper disposal of used electronic gadgets. □ Identity theft, unique ids, and biometrics. □ Gender and disability issues while teaching and using computers.	**Assignment No. 13** Theory based Question on Society , Law and Ethics.	Students will be able to understand the concept of Web Terminologies. Different ways to handle the web sites safely and also understand the way to secure the data.

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