

KENDRIYA VIDYALAYA SANGATHAN LUCKNOW REGION
SPLITUP SYLLABUS FOR COMPUTER SCIENCE 2018 -19(New)

CLASS XI

MONTH	TOPIC TO BE COVERED	Working Days
June-July 2018	<p>Unit 1: Programming and Computational Thinking (PCT-1) Basic computer organization: describe a computer system and mobile system, CPU, memory, hard disk, I/O, battery, power, transition from a calculator to a computer Familiarization with the basics of Python programming: a simple "hello world" program, process of writing a program, running it, and print statements; simple data-types: integer, float, string Introduce the notion of a variable, and methods to manipulate it (concept of L-value and R-value even if not taught explicitly) Knowledge of data types and operators: accepting input from the console, assignment statement, expressions, operators and their precedence. Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, divisibility.</p>	32
Aug 2018	<p>Periodic Test-1 Notion of iterative computation and control flow: for, while, flowcharts, decision trees and pseudo code; write a lot of programs: interest calculation, primarily testing, and factorials. Idea of debugging: errors and exceptions; debugging: pdb, break points.</p>	23
Sept 2018	<p>Lists, tuples and dictionary: finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary. Introduce the notion of accessing elements in a collection using numbers and names.</p>	22
October 2018	<p>Half Yearly Sorting algorithm: bubble and insertion sort; count the number of operations while sorting. Strings: compare, concat, substring; notion of states and transitions using state transition diagrams. Data Handling (DH-1) Introduction to Python Pandas Introduction to data structures in Pandas: Series, and Data Frame Operations on a Series: head, tail, vector operations Data Frame operations: create, display, iteration, select column, add column, delete column Binary operations in a Data Frame: add, sub, mul, div, radd, rsub</p>	17
November 2018	<p>Unit 2: Computer Systems and Organisation (CSO) Basic computer organisation: description of a computer system and mobile system, CPU, memory, hard disk, I/O, battery, power. Types of software: application, OS, utility, libraries. Language of Bits: bit, byte, MB, GB, TB, and PB. Boolean logic: OR, AND, NAND, NOR, XOR, NOT, truth tables, De Morgan's laws Information representation: numbers in base 2, 8, 16, unsigned integers,</p>	21

	<p>binary addition</p> <p>Strings: ASCII, UTF8, UTF32, ISCII (Indian script code)</p> <p>Execution of a program: basic flow of compilation – program binary execution</p> <p>Interpreters (process one line at a time), difference between a compiler and an interpreter</p> <p>Running a program: Notion of an operating system, how an operating system runs a program, idea of loading, operating system as a resource manager.</p> <p>Concept of cloud computers, cloud storage (public/private), and brief introduction to parallel computing.</p>	
December 2018	<p>Unit 3: Data Management (DM-1)</p> <p>Relational databases: idea of a database and the need for it, relations, keys, primary key, foreign key; use SQL commands to create a table, keys, foreign keys; insert/delete an entry, delete a table.</p> <p>SQL commands: select, project, and join; indexes, and a lot of in-class practice.</p> <p>Basics of NoSQL databases - Mongo DB.</p>	18
January 2018	<p>Periodic Test-2</p> <p>Unit 4: Society, Law and Ethics (SLE-1) - Cyber safety</p> <p>Cyber safety: safely browsing the web, identity protection, confidentiality, social networks, cyber trolls and bullying</p> <p>Appropriate usage of social networks: spread of rumours, and common social networking sites (Twitter, LinkedIn, and Facebook) and specific usage rules.</p> <p>Safely accessing web sites: adware, malware, viruses, Trojans</p> <p>Safely communicating data: secure connections, eavesdropping, phishing and identity verification.</p>	15
February 2018	<p>Revision, Project, SE Practical</p>	23
March 2018	<p>SEE-2018</p>	