COMPUTER SCIENCE (083)
SYLLABUS OF CLASS XI
SESSION: 2025-26

Theory : 70
Practical : 30

Date/Month	**Unit**	**Chapter/Topics**
21st April to 25th April	**Unit 2:** Computational Thinking and Programming - I	● Familiarization with the basics of Python programming: Introduction to Python, Features of Python, executing a simple "hello world" program, execution modes: interactive mode and script mode, Python character set, Python tokens(keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use of comments ● Knowledge of data types: Number(integer, floating point,complex), boolean, sequence(string, list, tuple), None, Mapping(dictionary), mutable and immutable data types. ● Operators: arithmetic operators, relational operators, logical operators, assignment operators, augmented assignment operators, identity operators (is, is not), membership operators (in not in) ● Expressions, statement, type conversion, and input/output: precedence of operators, expression, evaluation of an expression, type-conversion (explicit and implicit conversion), accepting data as input from the console and displaying output.
28th April to 9th May	**Unit 2:** Computational Thinking and Programming	● Errors- syntax errors, logical errors, and run-time errors ● Flow of Control: introduction, use of indentation, sequential flow, conditional and iterative flow ● Conditional statements: if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number.
12th May to 22nd May	**Unit 2:** Computational Thinking and Programming	● Iterative Statement: for loop, range(), while loop, flowcharts, break and continue statements, Nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number, etc.
I WEEKLY TEST		
1st July to 12th July	**Unit 2:** Computational Thinking and Programming	Strings: introduction, string operations (concatenation, repetition, membership and slicing), traversing a string using loops, built-in functions/methods–len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(),lstrip(), rstrip(), strip(), replace(), join(), partition(), split()
15th July to 26th July	**Unit 2:** Computational Thinking and Programming	Lists: introduction, indexing, list operations (concatenation, repetition, membership and slicing), traversing a list using loops, built-in functions/methods–len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(),

		sorted(), min(), max(), sum(); nested lists, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list.
29th July to 16th Aug	**Unit 2:** Computational Thinking and Programming	Programs based on list
II WEEKLY TEST		
19th Aug to 23rd August	**Unit 2:** Computational Thinking and Programming	Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership and slicing); built-in functions/methods – len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple; suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple.
Revision for HY exam from 26th Aug to 30th Aug		
Half Yearly Exam		
1st October to 11th October	**Unit 2:** Computational Thinking and Programming	Dictionary: introduction, accessing items in a dictionary using keys, mutability of a dictionary (adding a new term, modifying an existing item), traversing a dictionary,built-in functions/methods – len(), dict(), keys(), values(), items(), get(), update(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), sorted(); Suggested programs: count the number of times a character appears in a given string using a dictionary, create a dictionary with names of employees, their salary and access them.
14th October to 18th October	**Unit 2:** Computational Thinking and Programming	Introduction to Python modules: Importing module using 'import <module>' and using from statement, importing math module (pi, e, sqrt(), ceil(), floor(), pow(), fabs(), sin(), cos(), tan()); random module (random(), randint(), randrange()), statistics module (mean(), median(), mode()).
21st October to 25th October	**Unit 2:** Computational Thinking and Programming	Introduction to Problem-solving: Steps for Problem-solving (Analyzing the problem, developing an algorithm, coding, testing, and debugging), representation of algorithms using flowchart and pseudocode, decomposition
28th October to 1st November	**Unit 1:** Computer Systems and Organisation	● Basic computer organisation: Introduction to Computer System, hardware, software, input device, output device, CPU, memory (primary, cache and secondary), units of memory (bit, byte, KB, MB, GB, TB, PB)
4th November to 15th November	**Unit 1:** Computer Systems and Organisation	● Types of software: System software (Operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler, and interpreter), application software
18th November to 29th November	**Unit 1:** Computer Systems and Organisation	● Operating System(OS): functions of the operating system, OS user interface ● Boolean logic: NOT, AND, OR, NAND, NOR, XOR,

		NOT, truth tables and De Morgan's laws, Logic circuits
2rd December to 13th December	**Unit 1:** Computer Systems and Organisation	● Number System: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems ● Encoding Schemes: ASCII, ISCII, and Unicode (UTF8, UTF32)
WRITTEN TEST (TERM II)		
16th December to 20th December	**Unit 3:** Society, Law and Ethics	● Digital Footprints ● Digital Society and Netizen: net etiquettes, communication etiquettes, social media etiquettes ● Data Protection: Intellectual property rights (copyright, patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source software and licensing (Creative Commons, GPL and Apache) ● Cyber Crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, cyber trolls, cyber bullying
23th December to 27th December	**Unit 3:** Society, Law and Ethics	● Cyber safety: safely browsing the web, identity protection, confidentiality ● Malware: viruses, trojans, adware ● E-waste management: proper disposal of used electronic gadgets. ● Information Technology Act (IT Act) ● Technology and society: Gender and disability issues while teaching and using computers
Revision for Annual Exam in January 2026		