



# The Camford International School

## ANNUAL LESSON PLAN 2023-2024

GRADE : 11

SUBJECT :COMPUTER SCIENCE(065 )

MONTH	CHAPTER NO. AND NAME	DETAIL CONCEPTS TO BE COVERED	PRACTICALS	AIL/AIP
JUNE	Unit I: 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) . Types of software: system software (operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler & interpreter), application software . Operating system (OS): functions of operating system, OS user interface . Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits . Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems. Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32) Introduction to problem solving: Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging).		-

		<p>representation of algorithms using flow chart pseudo code, decomposition.</p> <p>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</p>		
<b>JULY</b>	<p>Unit II: Computational Thinking and Programming – 1</p>	<p>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</p> <p>Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators(is, is not), membership operators(in, not in)</p> <p>Expressions, statement, type conversion &amp; input/output: precedence of operators, expression, evaluation of expression, python statement, type conversion (explicit &amp; implicit conversion), accepting data as input from the console and displaying output</p> <p>Errors: syntax errors, logical errors, runtime errors</p> <p>Flow of control: introduction, use of indentation, sequential flow, conditional and iterative flow control. Conditional statements: if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number</p>	<p>Input a welcome message and display it. □ Input two numbers and display the larger / smaller number. □ Input three numbers and display the largest / smallest number</p>	-

<p style="text-align: center;"><b>AUGUST</b></p>	<p style="text-align: center;">Unit II: Computational Thinking and Programming – 1</p>	<p>Iterative statements: for loop, range function, while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number etc. Strings: introduction, indexing, string operations (concatenation, repetition, membership &amp; slicing), traversing a string using loops, built-in functions: len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split()</p>		<p style="text-align: center;">-</p>
<p style="text-align: center;"><b>SEPTEMBER</b></p>	<p style="text-align: center;">Unit II: Computational Thinking and Programming – 1</p>	<p>Lists: introduction, indexing, list operations (concatenation, repetition, membership &amp; slicing), traversing a list using loops, built-in functions: 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 Tuples: introduction, indexing, tuple operations(concatenation, repetition, membership &amp; slicing), built-in functions: 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.</p>	<p>Generate patterns using nested loop. Write a program to input the value of x and n and print the sum of the series. Determine whether a number is a perfect number, an armstrong number or a palindrome. Input a number and check if the number is a prime or composite number.</p>	<p style="text-align: center;">-</p>

		<p>Dictionary: introduction, accessing items in a dictionary using keys, mutability of dictionary (adding a new item, modifying an existing item), traversing a dictionary, built-in functions: len(), dict(), keys(), values(), items(), get(), update(), del(), clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), count(), sorted(), copy(); 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</p>		
<b>OCTOBER</b>	<p>Unit II: Computational Thinking and Programming – 1</p>	<p>Introduction to Python modules: Importing module using 'import ' 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) Digital Footprints . Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes .Data protection: Intellectual Property Right (copyright, patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source softwares and licensing (Creative Commons, GPL and Apache) . Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime.</p>	<p>Find the largest/smallest number in a list/tuple Input a list of numbers and swap elements at the even location with the elements at the odd location. Input a list/tuple of elements, search for a given element in the list/tuple. Input a list of numbers and find the smallest and largest number from the list. Create a dictionary with the roll</p>	<p>Comparative analysis of Cybercrime/ Cyber attack/ Scam/ Phishing committed in J&amp;K Vs TamilNadu</p>

			number, name and marks of n students in a class and display the names of students who have scored marks above 75.	
<b>NOVEMBER</b>	Unit III: Society, Law and Ethics	Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying. Safely accessing web sites: malware, viruses, Trojans, adware. E-waste management: proper disposal of used electronic gadgets Indian Information Technology Act (IT Act). Technology & Society: Gender and disability issues while teaching and using computers		