



The Camford International School

ANNUAL LESSON PLAN 2025-2026

GRADE : 12

SUBJECT : COMPUTER SCIENCE(083)

MONTH	CHAPTER NO. AND NAME	DETAIL CONCEPTS TO BE COVERED	PRACTICALS
MARCH	Unit III: Database Management	<ul style="list-style-type: none">• Database concepts – introduction to database concepts and its need.• Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key)• Structured query language – introduction to Data Definition language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date)• constraints (not null, unique, primary key)• create database, use database, show databases, drop database, show tables• create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table	<ul style="list-style-type: none">• Create a student table and insert data. Implement the following SQL commands on the student table: ALTER table to add new attributes / modify data type / drop attribute
MARCH	Unit III: Database Management	<ul style="list-style-type: none">• insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, 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,	<ul style="list-style-type: none">• Create a student table and insert data. Implement the following SQL commands on the student table: UPDATE table to modify data o ORDER By to display data in ascending / descending order DELETE to remove tuple(s) o GROUP BY and find

		<p>count), group by, having clause</p> <ul style="list-style-type: none"> • Joins: cartesian product on two tables, equi-join and natural join • Interface of python with an SQL database: connecting SQL with Python, performing insert 	<p>the min, max, sum, count and average</p> <p>Joining of two tables.</p>
APRIL	Unit III: Database Management	<ul style="list-style-type: none"> • Interface of python with an SQL database: update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications 	<ul style="list-style-type: none"> • Integrate SQL with Python by importing suitable module.
	Unit I: Computational Thinking and Programming – 2	<ul style="list-style-type: none"> • Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters 	<ul style="list-style-type: none"> • Write a random number generator that generates random numbers between 1 and 6 (simulates a dice).
MAY	Unit I: Computational Thinking and Programming – 2	<ul style="list-style-type: none"> • Default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope) 	<p>Programs based on computation and modules</p> <ul style="list-style-type: none"> • Read a text file line by line and display each word separated by a #. • Read a text file and display the number of vowels/consonants/uppercase/lowercase characters in the file. <p>Remove all the lines that contain the character 'a' in a file and write it to another file.</p>

JUNE	Unit I: Computational Thinking and Programming – 2	<ul style="list-style-type: none"> • Exceptional handling: Introduction, handling exceptions using try – except – finally blocks. • Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths • Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write() and writelines(), reading from a text file using read() • TEXT FILE : readline() and readlines(), seek and tell methods, manipulation of data in a text file 	<ul style="list-style-type: none"> • Create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message. • Create a binary file with roll number, name and marks. Input a roll number and update the marks.
JULY	Unit I: Computational Thinking and Programming – 2	<ul style="list-style-type: none"> • 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.writerow() and read from a csv file using csv.reader() 	<ul style="list-style-type: none"> • Create a CSV file by entering user-id and password, read and search the password for given userid. • Write a Python program to implement a stack using list.
AUGUST	Unit – I Computational Thinking and Programming – 2	<ul style="list-style-type: none"> • Data Structure: Stack, operations on stack (push & pop), implementation of stack using list • Evolution of networking: introduction to 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 (Circuit switching, Packet switching)	
SEPTEMBER	Unit – II Computer Networks	<ul style="list-style-type: none"> • Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), 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 	

Teacher's Incharge: