



EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of CSE (Artificial Intelligence and Machine Learning)

Approved by AICTE New Delhi | Affiliated to VTU, Belagavi,
Virgo Nagar, Bengaluru-560049

Action taken based on the analysis of students' and faculty feedback on curriculum for the academic year 2024-2025, Department regularly collects feedback on curriculum from students and faculty.

Recommendation	Action Taken
There are no recommendations given by the students.	As no recommendations were received from students, no action was required.
The faculty recommended including the concepts of NumPy, inheritance, and exceptions in the course BPLCK105B/205B – Introduction to Python Programming.	The suggested topics—NumPy, inheritance, and exceptions—have been incorporated into the course curriculum for the academic year 2025–2026.

HOD, CSE (AI & ML)

Head of the Dept.

CSE (Artificial Intelligence
& Machine Learning)

East Point College of
Engineering & Technology
Bengaluru - 560049

PYTHON PROGRAMMING		Semester	1/11
Course Code	1BPLC105B/205B	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:2:0	SEE Marks	50
Total Hours of Pedagogy (Theory and Lab hours)	40 + 24 (Practical)	Total Marks	100
Credits	4	Exam Hours	3
Examination type (SEE)	Theory		
Course outcome (Course Skill Set)			
At the end of the course, the student will be able to:			
CO1: Develop scripts using primitive language constructs of python.			
CO2: Identify the methods to manipulate primitive python data structures.			
CO3: Make use of Python standard libraries for programming.			
CO4: Build scripts for performing file operations.			
CO5: Illustrate the concepts of Object-Oriented Programming as used in Python.			
Module-1			
The way of the program: The Python programming language, what is a program? What is debugging? Syntax errors, Runtime errors, Semantic errors, Experimental debugging.			
Variables, Expressions and Statements: Values and data types, Variables, Variable names and keywords, Statements, Evaluating expressions, Operators and operands, Type converter functions, Order of operations, Operations on strings, Input, Composition, The modulus operator.			
Iteration: Assignment, Updating variables, the for loop, the while statement, The Collatz $3n + 1$ sequence, tables, two-dimensional tables, break statement, continue statement, paired data, Nested Loops for Nested Data.			
Functions: Functions with arguments and return values.			
Chapters: 1.1-1.7, 2.1-2.12, 3.3, 4.4, 4.5			
			Number of Hours:8
Module-2			
Strings: Working with strings as single things, working with the parts of a string, Length, Traversal and the for loop, Slices, String comparison, Strings are immutable, the in and not in operators, A find function, Looping and counting, Optional parameters, The built-in find method, The split method, Cleaning up your strings, The string format method.			
Tuples: Tuples are used for grouping data, Tuple assignment, Tuples as return values, Composability of Data Structures.			
Lists: List values, accessing elements, List length, List membership, List operations, List slices, Lists are mutable, List deletion, Objects and references, Aliasing, cloning lists, Lists and for loops, List parameters, List methods, Pure functions and modifiers, Functions that produce lists, Strings and lists, list and range, Nested lists, Matrices.			
Chapter: 5.1, 5.2, 5.3			
			Number of Hours: 8
Module-3			
Dictionaries: Dictionary operations, dictionary methods, aliasing and copying.			
Numpy: About, Shape, Slicing, masking, Broadcasting, dtype.			
Files: About files, writing our first file, reading a file line-at-a-time, turning a file into a list of lines, Reading the whole file at once, working with binary files, Directories, fetching something from the Web.			
Chapter: 5.4, 6.1-6.5, 7.1-7.8			
			Number of Hours:8
Module-4			

Modules: Random numbers, the time module, the math module, creating your own modules, Namespaces, Scope and lookup rules, Attributes and the dot Operator, Three import statement variants.

Mutable versus immutable and aliasing

Object oriented programming: Classes and Objects — The Basics, Attributes, Adding methods to our class, Instances as arguments and parameters, Converting an instance to a string, Instances as return values.

Chapter: 8.1-8.8, 9.1, 11.1

Number of Hours: 8

Module-5

Object oriented programming: Objects are mutable, Sameness, Copying.

Inheritance: Pure functions, Modifiers, Generalization, Operator Overloading, Polymorphism

Exceptions: Catching Exceptions, Raising your own exceptions

Chapter: 11.2.2-11.2.4, 11.3.2-11.3.9, 12.1, 12.2

Number of Hours:8

PRACTICAL COMPONENTS OF IPCC

PART - A: FIXED SET OF EXPERIMENTS

1.
 - a. Develop a python program to read 2 numbers from the keyboard and perform the basic arithmetic operations based on the choice. (1-Add, 2-Subtract, 3-Multiply, 4-Divide).
 - b. Develop a program to read the name and year of birth of a person. Display whether the person is a senior citizen or not.
2.
 - a. Develop a program to generate Fibonacci sequence of length (N). Read N from the console.
 - b. Write a python program to create a list and perform the following operations
 - Inserting an element
 - Removing an element
 - Appending an element
 - Displaying the length of the list
 - Popping an element
 - Clearing the list
3.
 - a. Read N numbers from the console and create a list. Develop a program to print mean, variance and standard deviation with suitable messages.
 - b. Read a multi-digit number (as chars) from the console. Develop a program to print the frequency of each digit with a suitable message.
4. Develop a program to print 10 most frequently appearing words in a text file. [Hint: Use a dictionary with distinct words and their frequency of occurrences. Sort the dictionary in the reverse order of frequency and display the dictionary slice of the first 10 items.
5. Develop a program to read 6 subject marks from the keyboard for a student. Generate a report that displays the marks from the highest to the lowest score attained by the student. [Read the marks into a 1-Dimensional array and sort using the Bubble Sort technique].
6. Develop a program to sort the contents of a text file and write the sorted contents into a separate text file. [Hint: Use string methods strip(), len(), list methods sort(), append(), and file methods open(), readlines(), and write()]: