

DELHI PUBLIC SCHOOL, JAMMU
Session : 2024-2025

Subject: Computer Science (083)

Class: XII

Syllabus Bifurcation

Computer science is **the study of computation, automation, and information**. Computer science spans theoretical disciplines (such as algorithms, theory of computation, and information theory) to practical disciplines (including the design and implementation of hardware and software).

OBJECTIVES OF THE THEORY:

To produce programmers equipped with an understanding of

1. Fundamental computational concepts underlying most programming languages.
2. The role of programming within the overall software development process.

OBJECTIVES OF PROJECT :

The aim of the class project is to create something that is tangible and useful using Python / Python and SQL connectivity. It is to be done in groups of two to three students and will be started by students at least 6 months before the submission deadline. The aim here is to find a real world problem that is worthwhile to solve. Students are encouraged to visit local businesses and ask them about the problems that they are facing. For example, if a business is finding it hard to create invoices for filing GST claims, then students can do a project that takes the raw data (list of transactions), groups the transactions by category, accounts for the GST tax rates, and creates invoices in the appropriate format. Students can be extremely creative here. They can use a wide variety of Python libraries to create user friendly applications such as games, software for their school, software for their disabled fellow students, and mobile applications, Of course to do some of these projects, some additional learning is required; this should be encouraged. Students should know how to teach themselves.

| <u>S.no</u> | <u>Month</u> | <u>Name of the Lesson/Topic</u> |
|--------------------|---------------------|---|
| 1. | April | Review of Python Basics Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope) <ul style="list-style-type: none">• Assignment/Foundation Worksheet to assess the previous knowledge. |
| 2. | May | Functions (contd.) <ul style="list-style-type: none">• Revision Sheet on the related topic. |
| 3. | June & July | File Handling (Text file, Binary File) <ul style="list-style-type: none">• Class Test to be conducted for revision purpose. |

| | | |
|-----|-----------|---|
| 4. | August | File Handling (CSV files contd.), Computer Networks <ul style="list-style-type: none"> Performing the Practical Test for the related topic. |
| 5. | September | Computer Networks(contd.) , Introduction to Database Management <ul style="list-style-type: none"> Kahoot Quiz Activity |
| 6. | October | Database Management, Aggregate functions (max, min, avg, sum, count), group by, having clause, joins : Cartesian product on two tables, equi-join and natural join Solving Questions Based on Previous Year Question Papers. |
| 7. | November | Interface Python with MySQL <ul style="list-style-type: none"> Revision Test through Assignments |
| 8. | December | Data structure: Stacks using List <ul style="list-style-type: none"> Assessment of Project Work |
| 9. | January | Revision of File Handling & My SQL |
| 10. | February | <ul style="list-style-type: none"> Class Tests/ Practical Implementation of the Programs to be done Doubt clearing session Quick Recap of Most Important Topics for Practical Exams |
| 11. | March | Revision for Final Examination <ul style="list-style-type: none"> Practice of Sample Question Papers |

EXAM SCHEDULE

Syllabus for Cycle Test-I

1. Review of Python Basics
2. Functions

Syllabus for Half Yearly Examination

1. Review of Python Basics
2. Functions in Python
3. File Handling
4. Computer Networks

Syllabus for Pre-Board-I

1. Review of Python Basics
2. Functions in Python
3. File Handling
4. Computer Networks
5. My SQL, Interface Python with MySQL

Syllabus for Pre-Board-II

1. Review of Python Basics
2. Functions in Python
3. File Handling
4. Computer Networks
5. My SQL, Interface Python with MySQL
6. Data structure(Stacks using List)

Mrs. Meenakshi Jamwal
(SUBJECT COORDINATOR)