

**St. Francis Institute of Technology  
Borivali (West), Mumbai-400103**

**Information Technology Department**

**Academic Year: 2023-2024**

**Semester: IV**

**Class / Branch / Division: SE - IT A/B**

**Subject: Paradigms and Computer Programming Fundamentals**

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**INTERNAL ASSESSMENT TEST-1 PORTION**

**Module 1: Introduction to Programming Paradigms and Core Language Design Issues**

- Introduction to different programming paradigms.
- Names, Scopes, and Bindings,
- Scope Rules, Storage Management.
- Type Systems, Type Checking, Equality Testing and Assignment.
- Subroutine and Control Abstraction: Stack Layout, Calling sequence, parameter passing
- Generic subroutines and modules. Exception handling, Co-routines and Events.

**Module 2: Imperative Paradigm: Data Abstraction in Object Orientation**

- Grouping of data and Operations- Encapsulation, Overloading, Polymorphism, Inheritance, Initialization and Finalization, Dynamic Binding.

**Module 3: Declarative Programming Paradigm: Functional Programming**

- Introduction to Lambda Calculus, Functional Programming Concepts, Evaluation order, Higher order functions, I/O- Streams and Monads.

**Text Books:**

1. Scott M L, Programming Language Pragmatics, 3rd Edition., Morgan Kaufmann Publishers, 2009 - Ch 3, 7, 8
2. Programming Languages: Concepts and Constructs; 2nd Edition, Ravi Sethi, Pearson Education Asia, 1996. - Ch 1, 4, 5, 6, 7, 8, 10
3. Graham Hutton, Programming in Haskell, 2nd Edition, Cambridge University Press, 2016

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