FAITH INFOTECH
Discover Potential. Deliver Performance.

PROPEL – Software Engineering Programme Objectives and Content

PROPEL has been designed to meet the requirements of the software industry for competent workforce. It prepares candidates to begin their career in this exciting field and develop themselves into successful professionals in the long term.

PROPEL focuses on holistic development of the participants. Keeping this in mind, the designers of PROPEL have given a balanced treatment of different areas such as technology, soft skills, language fluency, behavioural orientations and basic business knowledge. The programme enables participants to become professionals who solve real-world problems through the medium of software.

The total duration of the programme is 74 working days, divided into five 'Camps'. Each Camp has a major objective, and builds over the learning from the previous Camps. Camp 1 helps the participants to understand their future roles and to take charge of building their career. Camps 2 to 5 cover the major part of the content, with a project in each Camp.

The details of the five Camps are given below:

CAMP 1

2 Days

Participants set targets to be achieved within a two year period, and commit to develop the knowledge, skills and orientations required to achieve them, taking personal responsibility while working in a collaborative environment.

Participants prepare a case study on solving real-world problems using software.

Participants and facilitators set norms for collaboratively creating the learning environment, to maximize learning in the subsequent camps.

FAITH INFOTECH
Discover Potential. Deliver Performance.

C A M P 2

12 Days

Participants develop a software application applying the basic principles of programming and following a simple software development lifecycle model.

Foundations of Programming in C

1. Coding Standards
2. Variables and Data Types
3. Control Structures
4. Arrays
5. Functions
6. Structures and Unions
7. File Handling

Software Engineering

1. Context of Software Engineering
2. Software Engineering Processes Modeling
3. Software Development Life Cycle: Waterfall model, Iteration and Prototyping.

Data Structures using C

1. Introduction to Data Structures
2. Pointers
3. Stacks
4. Queue
5. Linked List
6. Binary Tree
7. Sorting and searching (Bubble, Quick, Insertion Sort, Linear and Binary Search)

Add-on

Soft Skills

1. Self Introduction
2. Telephone Skills role play
3. Group Discussion

Others

1. Project (16 hours).
2. Aptitude Sessions.
3. Presentation based on Data Storage.

FAITH INFOTECH
Discover Potential. Deliver Performance.

CAMP 3

10 Days

Participants develop a data model design.

Database using Oracle

1. Introduction to Database
2. Normalization
3. DDL
4. DML
5. SELECT
6. Joins
7. Functions
8. Sub queries
9. TCL

PLSQL using Oracle

1. The other objects in DB
   a. Views
   b. Indexes
   c. Sequences
   d. Synonyms
2. PLSQL Basics
3. Exception handling
4. Stored procedures and Functions
5. Cursors
6. Triggers
7. Performance tuning

Add-on

Soft Skills

1. Topic Presentation
2. Extempore speech making
3. Grammar

Others

1. Project
   - JAVA - Data base would be Oracle
   - .NET - Data base would be SQL Server
2. Aptitude Sessions
3. Topic Presentations

FAITH INFOTECH
Discover Potential. Deliver Performance.

CAMP 4

25 Days [Technology Specialization]

Participants develop a software application, using C#.Net, following the Unified Software Development Process.

Option 1: .Net

1. Introduction to .Net 4.0
2. Introduction to C#
   a. Basics
   b. Console application
   c. Windows application
   d. IDE - Visual Studio 2010
3. Object oriented programming using C#
   a) Class
   b) Polymorphism
   c) Inheritance
4. Creating Class Libraries
5. Memory Management
6. Properties
7. Indexers
8. Delegates and Events
9. Exception handling
10. Interface and Abstract Classes
11. Collections and Generics
12. ADO.Net
13. Files and Streams
14. XML and Serialization
15. Threading
16. Assemblies

Option 2: Java

1. Evolution of Java
2. Language Basics
   a. Data Types, Variables and Arrays
   b. Operators
   c. Control Statements
3. Object oriented programming using Java
   a. Classes and Encapsulation
   b. Polymorphism
   c. Inheritance
4. Packages, Abstract classes and Interfaces
5. Exception Handling
6. Multithreaded Programming
7. File handling and streams
8. Reflection
9. Network Programming
10. Abstract Window Toolkit and Event Handling
11. Swing
12. JDBC Objects
13. Remote Method Invocation

FAITH INFOTECH
Discover Potential. Deliver Performance.

CAMP 4

Software Engineering & OOAD

1. Actor and Use Case Analysis.
2. UML
3. Version Control / VSS SRS, Test Cases.

Add-on

1. Project

a. Java - Data base would be Oracle
b. .Net - Data base would be SQL Server

2. Soft Skill

a. Reading Skills
b. Business E-Mails

1. Others

a. Aptitude Sessions
b. Topic Presentations

CAMP 5

25 Days [Technology Specialization]

Participants develop a web-based application, using ASP.Net in C# or J2EE, following the Unifi Software Development Process.

Option 1: ASP .Net

1. Web Application
2. HTML and CSS
3. JavaScript
4. Web Controls
5. User Controls
6. Master pages
7. State Management
8. Three tier Architecture
9. XML and Serialization
10. Debugging

Option 2: J2EE

1. Web Technology - Java Enterprise Edition Overview

   Web Servers: Tomcat, WebLogic – Architecture and Administration
2. HTML, CSS
3. JavaScript
4. Servlets
5. JSP (Java beans)
6. JSTL

FAITH INFOTECH
Discover Potential. Deliver Performance.

CAMP 5

Option 1: ASP .Net

11. Tracing
12. Authentication and Authorization
13. Web Services
14. Configuration
15. Caching
16. Themes

Option 2: J2EE

7. Introduction to Different Frameworks & EJB
8. Struts 2.0 framework
9. Hibernate
10. XML
11. AJAX

Add-on

1. Soft Skills

a. Listening Skills
b. Interview Skills
c. Final Assessment

2. Project

a. Java - Data base would be Oracle
b. Net - Data base would be SQL Server

3. Others

a. Aptitude Final Tests
b. Mock Interview
c. Interview Preparation Sessions
d. Topic presentation about various frameworks