Technical Training

Highly Interactive 30 to 48 Hours Workshop

Background

Technical Training is a 30 - 48 hours workshop, which is fully equipped to provide a review on high end software training in the latest technologies. This helps the students analyze their capability technically and will also sharpen their technical skills before going to the interview. This cost-effective, customized institutional training solutions help students enhance their capabilities, add new skills and to equip themselves, re-tool their core competencies and stay productive. It uses simple, in an easy to understand language to describe the methods and tools to improve the quality of student's in campus recruitment.

The program works on the following underlying principle, "Be competitive. Stay skilled and techno-savvy"

What are the salient features of the program?

- Uniqueness in Methodology
- Interaction with experts / Practioners
- All Programs are handled by Certified trainers
- All Programs have clear metrics for measuring the effectiveness

Some salient features of Institutional program are:

- Deals with a set of skills.
- Is not designed to generate agreement but reactions.
- Uses sharing and reflecting on experiences of the participants as the major learning tool.
- It is an intensive but a flexible programme designed to suit participants with varied learning patterns.
- This program will enable the College students to understand and develop their overall technical skills, equip them with the right kind of knowledge & skill sets required to face the challenges in today's competitive corporate world
- It helps the student's to answer the technical questions in a easy and a structured manner.

How will the students benefit from the program?

- Sharpen the technical skills of the students before the interview
- To function effectively in the campus recruitment
- Take part effectively in various selection procedures adopted by the recruiters and be technically sound.
- Once recruited, perform effectively thereby enhancing the brand image of the college

How it operates - Modules

Module 1 (A): C Programming

- Intro to C: The basics of C
- If statements: If statements, and how to use boolean operators
- Loops in C: All you want to know about loops
- Functions: Using functions
- Switch case: About the switch case structure
- Pointers: Using pointers to access memory locations
- Structures: Learn about grouping multiple variables together under a single name
- Arrays: Learn about arrays - one variable with many values
- C-style Strings: About character arrays (strings)
- File I/O: About file I/O in C
- Typecasting: Typecasting: making variables look like another data-type
- Command line arguments: How to accept command line arguments
- Linked Lists: The basics of singly linked lists
- Recursion: Recursion--a function calling itself
- Variable argument lists: Learn to write flexible functions accepting a variable number of arguments
- Binary Trees: Learn about binary trees, a fundamentally important data structure.

Module 1 (B): C ++ Programming

- Intro to C++: The basics of C++
- If statements: If statements, and some boolean information
- Loops in C++: All you want to know about loops
- Functions: Functions...all about them, making and using the critters
- Switch case: About the switch case structure
- Pointers: Using pointers to access memory locations
- Structures: Structures, all about them, and how to use them
- Arrays: All about arrays
- Strings: About character arrays (strings)

- File I/O: About file i/o
- Typecasting: Typecasting: making variables look like another data-type
- Classes: Introduction to Object Oriented Programming (OOP)
- Inline functions: More information about functions
- Command line arguments: How to accept command line arguments (AND checking file existence)
- Linked Lists: The basics of singly linked lists
- Recursion: Recursion--a function calling itself
- Variable argument lists: Functions accepting a variable number of arguments
- Binary Trees: Introduction to an important abstract data type
- Inheritance: Inheritance - An Overview
- Initialization Lists and Inheritance Initialization lists are necessary for most classes that use inheritance or include objects
- C++ Class Design: More tips and tricks for class design
- Enumerated types: Learn to use enumerated types for type-safety and clarity
- Formatted Output: in C++ using i/o manipulation Learn how to create nicely formatted output in C++.
- Templates in C++: Learn how to use templated classes in C++
- Templated functions: Templates can be used to write generic functions as well as generic classes
- Template specialization and partial specialization: Learn how to optimize templates by creating specialized instances for certain types
- Understanding the C Preprocessor: Constants, Macros, and other Tricks Learn how to use the C preprocessor

Module 2: Java Programming

2 (A): Compiling and Running a Simple Program

- A Word About the Java Platform
- Setting Up Your Computer
- Writing a Program
- Compiling the Program
- Interpreting and Running the Program
- Common Compiler and Interpreter Problems
- Code Comments
- API Documentation

2 (B): Building Applications

- Application Structure and Elements
- Fields and Methods
- Constructors
- To Summarize

2 (C): Building Applets

- Application to Applet
- Run the Applet
- Applet Structure and Elements
- Packages

2 (D): Building a User Interface

- Swing APIs
- Import Statements
- Class Declaration
- Global Variables
- Constructor
- Action Listening
- Event Handling
- Main Method
- Applets Revisited

2 (E): Writing Servlets

- About the Example
- HTML Form
- Servlet Backend

2 (F): File Access and Permissions

- File Access by Applications
- Exception Handling
- File Access by Applets
- Granting Applets Permission
- Restricting Applications
- File Access by Servlets
- Appending

2 (G): Database Access and Permissions

- Database Setup
- Create Database Table
- Database Access by Applications
    - Establishing a Database Connection
    - Final and Private Variables
    - Writing and Reading Data
- Database Access by Applets
    - JDBC Driver
    - JDBC-ODBC Bridge with ODBC Driver
- Database Access by Servlets

Module 3: Database Concepts and SQL Programming:

- Database and SQL: Definition of Database and SQL.
- RDBMS/DBMS (Procedural and Non-Procedural): Explain these concepts:
- Database Normalization: Explain database normalization and all the forms.
- Database Design: Explain the steps and documents prepared for database design.
- Basic SQL Queries: Explain the basic SQL queries.
- Building Database in MySQL: Steps to build a database using MySQL (Open Source)
- Keys: Explain the different types of Keys available and their usage.
- Advanced SQL Queries: Explain the advanced SQL queries

- Full Text Indexing and Searching: Powerful searching
- Optimization: Explain Clustering and Ordered Indices.
- Replication: Usage and how replication is done.
- Transactions: Define a Transaction using ACID.
- Views, Triggers and Procedures: Explain with examples, views, triggers and procedures.
- Distributed and Object Oriented Databases: Explain distributed and OO databases.

Module 4: UNIX (Linux)

- What is UNIX and is Linux an OS for us?
- Directories:
- Moving around the file system:
- Listing directory contents:
- Changing file permissions and attributes
- Moving, renaming, and copying files:
- Viewing and editing files:
- Shells
- Environment variables
- Interactive History
- Filename Completion
- Bash shell.
- Redirection:
- Pipes:
- Command Substitution
- Searching for strings in files: The grep command
- Searching for files : The find command
- Reading and writing tapes, backups, and archives: The tar command
- File compression: compress, gzip, and bzip2
- Looking for help: The man and apropos commands
- Basics of the vi editor
- Redhat Linux OS Demonstration:

Module 5: Web Applications

- Introduction to web apps: What is a web app and how does it affect our lives.
- Web 2.0: What is Web 2.0?
- Technologies used in the Web apps world: All the technologies that go in to bring up a web application.
- Types of web apps: Different type of web applications based on technology and business needs.
- Requisites to start developing a web app: Skill set and tools/software required starting developing a web app development.
- Basic PHP/MySQL web app: The most common type of web app available on the Internet.
- Basic Web 2.0 web app: Web app development the Web 2.0 way.
- Basic J2EE web app: The enterprise web app.
- Future of web apps: What to expect from future web app developments and generate ideas about them.

Module 6: Project Delivery

- Project Development Methodologies: The various development methodologies followed in the industry and their pros and cons.
- Various phases of project lifecycle: The phases of a project lifecycle and what happens in every phase.
- Deliverables at every phase: The deliverables submitted at every phase in a project lifecycle.
- Roles and Responsibilities: The various roles and their corresponding responsibilities in a project.

Module 7: Project Documentation

- Importance of project documentation: Why project documentation is so important?
- Various types of project documentation: The types of documentation for every project deliverable and phase.
- Documentation delivered at every phase: What documentation to deliver at which phase.
- Documentation standards: The standards followed which preparing and reviewing the documentation.

Module 8: Web Application Project: **Need of the hour:**

- A firsthand experience at project with guidance from experienced trainers.
- It prepares the student with ideas for the final year project.
- Confidence boost after practical exposure to the concepts learnt so far.

Module 9: VLSI

9 (A): VHDL

- VHDL Application field
- VHDL Language & Syntax overview
- Simulations & Process executions
- Synthesis & Advanced Synthesis
- Project Management overview

9 (B): Verilog

- What's new in Verilog
- Verilog Operations & Behavioural Modelling
- Verilog Quick Reference

9 (C): ASIC - FPGA

- ASIC Suppliers & standard logic suppliers
- Its usage in technology
- Case studies on ASIC – FPGA

9 (D): EDA & CAD

- Schematic capture and PCB layout
- Free verilog tools
- CAD CAM Overview

Module 10: Embedded Technology

- Micro Controller
- Programming micro controller using 'C'
- Advanced concepts in 'Embedded C'
- PIC Microcontroller hardware & programming
- Specialities in Embedded system
- Recent trends in Embedded systems
- Serial & wireless communication, TCP / IP

Technical Training

Highly Interactive 30 to 48 Hours Workshop

Training Modules for different departments

Department	Modules
IT, CSC, MCA	Modules 1 – 8
EEE, E&I , Mech	Modules 1 & 2 (overview) – 3 -8 (Overview & Basics)
Telecom, ECE	Modules 3 - 10

Infrastructure Required

- Classroom with white board & markers
- Computers with internet connectivity for each student for 3 days (If option 1 is chosen)

Option 1 :
Summarized recap of the technical skills with interactive delivery and some practical exposure along with technical interview

Option 2 :
Only summarized recap of the technical skills with interactive delivery along with the technical interview

Recognition:

Once the projects are delivered, the students who developed the top three projects (as decided by the Staff and Training faculties) should be recognized

Technical Quiz:

Quiz at the end of every session: An oral quiz would be conducted at the end of every session. This would help improve students' participation is the session and to understand the knowledge gain by the students.

Online Quiz at the end of every week: An online quiz to be held every week and the top three students recognized. This would be based on infrastructure availability – If infrastructure unavailable it could be conducted as a written quiz.

Mock Technical Interview Questions

- The students will get an opportunity to attend mock technical interviews from the expert panel trainers from corporate.
- The students will enhance their capability in terms of answering the technical questions.
- The students will realize their strength & weakness and prepare for the same.

Other Details:

- Invoice will be raised on the beginning of the training course and full payment must be made on the last day of the training course;
- All payments must be made by cheque/online transfer etc., drawn in favour of Sieger Training Consultants Pvt. Ltd. Sieger will charge on INR basis only;
- Overseas clients will have to take care of all the training materials directly as briefed by Sieger Training. However, Sieger can procure some (which can be transited) not all, on behalf of the client but any additional charges for custom clearance has to be taken care by client only;
- CLIENT will have to arrange training venue, LCD, Speakers, Mike on their own;
- CLIENT will arrange for trainers Tea / Coffee and Lunch during the training Days;
- Cancellation of confirmed programmes shall be intimated one week in advance else 50% of the total charges shall be applicable;
- CLIENT will recognize the intellectual property rights of Sieger Training and such materials are not to be copied without prior written approval of Sieger Training;
- Take all responsible steps to hold all Sieger Training copyrighted materials confidential to Client;
- Guarantee that no training will be conducted using Sieger Training concepts or material is carried out for employees of CLIENT and CLIENT shall not entertain Sieger Group Trainer's or their Associates to facilitate the training program directly without prior written approval of Sieger Training Consultants (P) Limited;
- Ensure that any materials of Sieger Training supplied to internal employee(s) are retained by Client and or returned to Sieger Training in the event that the employee(s) ceases to be employed by the company;
- Ensure that no substantive modification of course design or content occurs without the prior written permission of Sieger Training, which shall not be withheld unreasonably;
- Treat this agreement as confidential and not divulge its contents to third parties;
- Inform Sieger Training of any internal procedures for the payment of invoices;