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ASSURANCE**



EVOLUTION OF YOUTH TO ENTREPRENEURS!

***STRATEGIC DEVELOPMENT
CAREER GUIDE***

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*New Emerging
Technology Providers*

ABOUT APEX I SYS

Apex I Sys has worldwide experience in the new emerging time of a leading technology company in Embedded Systems and Software Development. Apex specializes in Embedded & Software Product Design, Development, and Training. Apex offers Technical Education Solutions in Various Technology Development tools to Engineering colleges Universities, and corporate's. The inscription of establishment, Which was placed 14 years ago, was again restored with reinvigorated.

Apex **Embedded Division** mainly deals with Industrial Training Programs for engineering students, Corporate's, and organizations. The technologies offered for Circuit branch training are **Embedded Systems, Automotive Embedded, EV Technology, IOT PCB/VLSI Design, and PLC/SCADA/HMI.**

IT Infrastructure with a dedicated team of over 15 years experienced professionals. We offer a wide range of **IT solutions** including, e-commerce development, web applications software development, digital marketing, branding, and IT consultation. Our expertise spans across various technologies such as **Python, Java, AI-DS, Machine Learning React, Angular, Data Analysis, .NET, WordPress, UI/UX** and more.

The **Mechanical Division** has a successful track record and experience in training of **Mechanical Design, MEP, HVAC, PDMS, SP3D, E3D & NDT Etc.** The Industrial Training focuses on facilitating students with Live Projects on the latest technologies under the strict guidance of Industry Experts. Apex provides the core solutions in the relevant field by integrating new ideologies and live projects-oriented training in this highly demanded sector with innovative ideas to build up and improve technical skills.

OUR MISSION

Deliver what our customer need.
When they need & How they
Want it.

OUR GOAL

Set the Industry Benchmark for
Service & Operational
Excellence.

OUR VALUE

Customer priority, People Count
Operational Excellence and
Reputation Matters

OUR SERVICES



Embedded Product
Development



PCB Design &
Reverse Engineering



PLC / SCADA
Automation



MEP / HVAC & CIVIL
Drafting & Modeling



Software
Development



Mobile App's
Development



Website & Web
App's Development



Digital Marketing
& Branding

DIPLOMA IN EMBEDDED SYSTEM

ELECTRONIC SYSTEMS

Electronics Components, Active & Passive Components Concepts of Analog & Digital Circuit, Concepts of Power Supply (AC & DC) Application of Semiconductor, MOSFET JFET, BJT, UJT, DIAC, TRIAC SCR, FET, Thermistor

REVERSE ENGINEER

Draw, Scan or Photograph of PCB for Image Prep, Upload the Image, Construct Layout "Paint" holes and solder pads Remove PCB trackpads, Adjust saturation and layers, Circuit Tracking & Debugging, Create Schematics, PCB's schematic BOM Generation

C C++ & EMBEDDED C

C Fundamentals, Embedded C Operators & Expressions Operators, Control Statements Function, Arrays & Pointers Structure & Unions, OOP's Introduction to C++ Program Classes, Objects, abstraction encapsulation, inheritance and polymorphism & Datastructure

HARDWARE

µController, Arduino Uno PIC Controller (16F / 18F) ARM Processor 7 & Cortex M4 STM 32F446RE - Nucleo Board TI - MSP 430FR24xx

PROTOCOLS

Timers / Counters, ADC / DAC Module, EEPROM Communication Protocol, Bus Standard RS 232, RS485 US(A)RT, I2C / SPI CAN Protocols.

INTERFACING

LED, 7 Segment, LCD Display Keypad, Analog & Digital Sensors, Stepper & Servo Motor, Relay, Wifi, GSM, GPS Bluetooth Interfacing

RTOS

uCOS II, Free RTOS, RTOS Components, Micro C/OS II Inter task communication techniques, Scheduling Algorithm, Kernel Structure

LINUX KERNAL

Introduction to the Linux kernel, Linux kernel sources New features in Linux 2.6 Linux kernel command usage Files and process subsystem in linux kernel, Memory management in linux kernel Inter Process Communication Interrupts, Time and Timers Creating Libraries, Kernel Synchronization, Kernel Parameters, Kernel Configuration & Compilation

DEVICE DRIVES

Introduction to Device driver Kernel Module Program Basics, Kernel Debugging Techniques, Accessing Hardware and Interrupt Communicating with Hardware, Accessing Hardware Mechanisms Handling Tasklets & Bottom halves Kernel Threads Sleep & wakeup Memory Management, Concurrency and Race Conditions Time Delays and Deferred Work The Linux Device Model Serial device driver



TOOLS COVERED

CAREER OPPORTUNITIES

- Embedded Programmer
- Embedded Testing
- Embedded Programmer
- Embedded Developer
- Reverse Engineer
- Integration Engineer
- Embedded R&D Engineer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

DIPLOMA IN INTERNET OF THINGS (IOT)



ELECTRONIC SYSTEMS

Electronics Components, Active & Passive Components Concepts of Analog & Digital Circuit, Concepts of Power Supply (AC & DC) Application of Semiconductor, MOSFET JFET, BJT, UJT, DIAC, TRIAC SCR, FET, Thermistor

IOT INTRODUCTION

Concepts and Definitions of IOT Requirements, Functionalists and structure of IOT, IOT Architecture, The major component of IOT (Hardware & Software) IOT communication and networking protocols, Role of wired and wireless communication. IOT services and applications. IOT Standards, Connectivity

EMBEDDED C

Embedded C Fundamentals Operators & Expressions Control Statements, Function Arrays & Pointers, OOP's Introduction to C++ Program Classes, Objects, abstraction encapsulation, inheritance and polymorphism

HARDWARE

Arduino Uno / Mega Raspberry Pi, ARM Processor 7 & Cortex M4, STM 32F446RE - Nucleo Board TI - MSP CC 3200, Real-time systems, & embedded software, OS and Drivers

PYTHON PROGRAM

Introduction To Python Python3 Install Python & Environment Setup Identifiers, Keywords and variables Getting User Input Data Types List, Ranges & Tuples Python Dictionaries And Sets Input And Output In Python Python Functions OOP Built-In Class Attributes Exceptions Handling

INTERFACING

LED , 7 Segment, LCD Display Keypad, Analog & Digital Sensors, Stepper & Servo Motor, Relay, Wifi , GSM , GPS Bluetooth Interfacing Wireless Sensor Networks Wireless Protocols

DATA COMMUNICATION

How to transfer data by Wireless / Wired connectivity Ipv4/Ipv6, Ethernet/GigE MIPI, M-PHY, UniPro, SPI, BIF SuperSpeed USB Inter-Chip (SSIC), Mobile PCIe (M-PCIe) and SPI, GSM , 2g ,3g ,4g & 5g IEEE 802.15.4, IEEE 802.15.4e 802.11ah, Relay Access Point

STORAGE & RETRIEVAL

Storage in Cloud / Server Inhouse Storage Databases Connectivity with IOT Mysql Analysis Of data using the python Module Visualization and interpretation of Data

IOT SECURITY

Attack, Defense, and Network Robustness of Internet of Things, Malware Propagation and Control in the Internet of Things Privacy Preservation Data Dissemination, Trust and Trust Models for the IoT Authentication in IoT Computational Security for the IoT Security Protocols for IoT Access Networks Security Testing

TOOLS COVERED



CAREER OPPORTUNITIES

- Embedded Programmer
- Embedded Testing
- IOT Engineer
- IOT Developer
- Network Engineer
- Integration Engineer
- Embedded R&D Engineer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

DIPLOMA IN EV TECHNOLOGY

ELECTRONIC SYSTEMS

Electronics Components
Active & Passive Components
Power Electronics & Electrical
Concepts of Analog & Digital
Circuit, Concepts of Power
Supply (AC & DC) Application
of Semiconductor, AC to DC
Converter, DC to DC & Inverter

VEHICLE FUNDAMENTAL

Basics of Electro mobility
[Pure EV, Hybrid, Plug-In
Hybrid] , EV and IC engine-
pros, cons EV powertrain
architecture Vehicle
Performance Maximum Speed
of a Vehicle Gradeability
Acceleration Performance

BATTERY MANAGEMENT

Battery modeling advantages
and Disadvantages
Characteristics of battery cell
Battery sizing Introduction and
objective of BMS Charging and
discharging control
Understanding of SOC, Cell
balancing, BMS topologies
SoC estimation Protection and
battery management system

EV MOTORS & CONTROL

Motor ratings EV/HEV motor
requirement, Types of Motors
Torque and speed control
Torque and speed control SRM
Motor drives and converters
used in EVs , control using
MATLAB Simulink

EMBEDDED SYSTEM

µControllers, ARM Processor 7
& Cortex M4, STM 32F446RE
Nucleo Board, TI - MSP
430FR24xx

PROTOCOLS

Timers / Counters, ADC / DAC
Modules, EEPROM Memory
Communication Protocol , Bus
Standard RS 232, RS485
US(A)RT, I2C / SPI
CAN Protocols

INTERFACING

LED , 7 Segment, LCD Display
Keypad, Analog & Digital
Sensors, Stepper & Servo
Motor, Relay, Wifi , GSM, GPS
Bluetooth Interfacing

ADAS SYSTEM

ADAS [Advanced Driver
Assistance Systems] ADAS
Automotive Radar Camera
(Vision System), Lidar
Ultrasonic Sensor, Adaptive
Cruise Control (ACC) Rear
Cross Traffic Alert (RCTA)
Vehicle Exit Alert Front Cross
Traffic Alert Forward Collision
Warning Blind Spot Detection
Parking Assistance System
intelligent Head Light Control

MATLAB / AUTOSAR

Introduction to MATLAB
AUTOSAR Architecture
Methodology used in autosar
ECU extract, ECUC and
System description. various
layers of Autosar
Introduction to concepts of
BSW, RTE and SWC Design
and Development AUTOSAR
RTE, Configuration of MCU
COM, CANTP, CAN, CANIF

IOT

Real-time monitoring of the
health and performance of an
EV's battery. This includes
tracking temperature, voltage
current, and charge level.



TOOLS COVERED

CAREER OPPORTUNITIES

- EV Battery Engineer
- Automotive Design Engineer
- Data Analyst for EV
- Embedded Developer
- Automotive Testing Engineer
- Integration Engineer
- EV Product Developer
- EV R&D Engineer

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

DURATION
420 HR

DIGITAL ELECTRONICS

Electronics Components
Combinational logic, sequential logic, circuit design concepts memory types, STA, Setup time, Hold time, timing closure fixing setup time and hold time violations Launch flop capture flop

DESIGN FLOW

Specification, RTL coding, lint checks, RTL integration Connectivity checks, Functional Verification, Synthesis & STA Gate level simulations Power aware simulations Placement and Routing Post silicon validation

VHDL

Introduction to VHDL, code Structure, Library Functions Entity, Architecture, Data type Operators, Attributes, Generic Behavioral Modeling, Modeling Techniques, Dataflow Modeling Structural Modeling, Test Bench, FPGA Implementation

HDL - VERILOG

Verilog language basics Verilog execution using Modelsim, Verilog constructs Literals, Data types, registers nets, Vectors, Array, Operators Various styles of Modeling Data Flow, Behavioral, Gate level, Switch level Continuous assignments Combinational logic coding : Half adder, full adder, multiplexer comparator encoder, decoder, priority encoder. Generate construct Procedural timing control task and function, system task and function, modeling memories and FSM Parameters, Port connections Procedural blocks, Sensitivity timescale

SYSTEM VERILOG

Functional Verification overview, System Verilog Course overview, operators data types, Arrays, Array of Queues in scoreboard implementation, other complex declarations, Object Oriented Programming, Class, Object handle, Class elements Properties, methods constraints

UVM - METHODOLOGY

What is UVM? Need for a methodology? How UVM evolved? OVM, AVM, RVM NVM, eRM, UVM class library OOP basics, Encapsulation Inheritance, Polymorphism Parameterized classes macros Static properties and static methods. Abstract classes Pure virtual methods UVM Class Library, Macros Utilities, UVM Class Library Macros, Utilities, TLM1.0 Push Pull, FIFO, Analysis Simulation Phases UVM common phases Scheduled phases Sequences Sequencers

ULSI

Real-time monitoring of the health and performance of an ICs. This includes tracking temperature, voltage current and charge level., ULSI Ultra Fast Methodology using Xilinx Vivado IDE

TOOLS COVERED



CAREER OPPORTUNITIES

- Design Engineer
- SoC Verification Engineer
- VLSI Programmer
- VLSI Layout Engineer
- VLSI System Architect
- Integration Engineer

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

CERTIFIED IN PCB DESIGN ENGINEER

ELECTRONIC SYSTEMS

Electronics Components
Active & Passive Components
Concepts of Analog & Digital
Circuit, Concepts of Power
Supply (AC & DC) Applicatio of
Semiconductor, MOSFET, JFET
BJT, UJT, DIAC, TRIAC, SCR
FET, Thermistor

REVERSE ENGINEER

Draw, Scan or Photograph the
PCB for Image Prep, Upload the
Image, Construct Layout
"Paint" holes and solder pads
Remove PCB trackpads, Adjust
saturation and layers, Circuit
Tracking & Debugging, Create
Schematics, PCB's schematic
BOM Generation

SCHEMATIC DESIGN

Beginning a New Schematic
Placing Items in the Schematic
Placing Symbols and Ports
Editing the Schematic, Creating
New Components, Working
with Sheets and Ports
Checking the Schematic for
Errors

PCB DESIGN

Placing Items in the Layout
Editing the Layout, Placing
Power and Ground Planes
Changing the Board's Perimeter
Creating New Components
Linking the Schematic and PCB
Keyboard Shortcuts, Foot print
and Pads, Schematic, PCB and
Integrated Library Creation
Drawing Routing, Multi Layer
Design, Multi sheet Design,
Advance Design Technic, BOM
Gerber Generation for the PCB
Fabrication.Etc..

PCB ANALYZING

Layout & Circut Design Rules
PCB Track Width Calculation
PCB Track Resistance & Temp
Calculation, PCB Testing Rules
Technics & Types of Testing
Acquiring the Components
Component Placement and
Routing verifying board design
Understanding design
Annotation, PCB Layer Maping
& Layer Management System
EMI / EMC Calculation

PCB FABRICATION

Introduction to printing
process, Placing of circuit on
copper clad, Etching process
for final PCB, Printing and
etching

DRILLING & SOLDERING

Drilling of designed PCB
Soldering Process of
Components, Board Testing
and Troubleshooting



ALTIUM
DESIGNER

cādence



EAGLE

KiCad

SATURN
PCB DESIGN, INC

TOOLS COVERED

CAREER OPPORTUNITIES

- PCB Design Engineer
- Testing & Analysis
- Sr.Design Engineer
- SoC Verification Engineer
- Reverse Engineer
- Integration Engineer
- R&D Engineer

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

DURATION
120 HR

DIPLOMA IN AUTOMATION ENGINEER

ELECTRICAL SYSTEMS

Electrical Components, voltage current, resistance Electric power, Power efficiency, Power factor Concepts of Analog & Digital Circuit, Concepts of Power Supply (AC & DC) Application of Semiconductor Conductors, Insulator, Relays

CONTROL PANEL

PLC Panel Architecture Different Types of Panels Basic of Panel Wiring Specification & Physical Dimension of Component Mapping, Earthing & Cabling of Panels, Electrical Standard Procedures (IEEE, JIC, IEC)

PLCs

Getting Familiar With PLC Type's of PLC Hardware Architecture, Application and Advantage of PLCs, Sourcing and Sinking concept, Simulator analysis of a PLC Programming Communication with PLC Uploading, Downloading & Monitoring programs Instruction List, Ladder Logic

LADDER LOGIC PROGRAM

Comparison b/w Gates, Relay Logic& ladder logic Description of using Memory in a programming, Mathematical Concept ADD, SUB, MUL, DIV and etc, Logical Concept AND ANI, OR, ORI, EXOR, NOT etc Special Function MOV, SET RST, CMP, INC, DEC Programming based on Timer And Counter

INTERFACING

Relay & Sensor Interfacing Basic principle of Relay working Making AND, OR gate NOT gate logic circuit Interfacing relay with sensor Relay based Control designing Interconnection between Different Relay & Switch's

HMI / VFD

HMI System Overview, HMI Hardware, Field Controls Station, Operation of standard Display Panel, VFD (variable frequency drive), drives an electric motor by varying the frequency and voltage of its power supply

SCADA

Introduction to SCADA Software, Creating new SCADA Project, GUI Designing/Tag Substitutions Dynamic Process Mimic/Real Time Trend, Historical Trend/How to create Alarms & Event, Communication with PLC, Introduction to other SCADA, Communication through DDE/OPC/DIRECT driver. Various other related properties, Introduction to graphic Properties like Sizing Blinking, Filling, Analog Entry Movement of Objects Visibility etc.

SENSOR & PERIPHERAL

Sensor And Process Instrumentation, Introduction to various Sensors Temperature measurement (Thermistor ,etc..) Working on the proximity sensor, Working on the photo electric sensor Flow measurement and its working principle, Pressure measurement and its working principle, Load and level measurement, Solenoid valve working and it's Principle Making Switches by using Sensor

DURATION
240 HR

SIEMENS



OMRON

Schneider
Electric

TOOLS COVERED

CAREER OPPORTUNITIES

- PLC Programmer
- Panel Wiring Engineer
- HMI & VFD Engineer
- Automation Engineer
- SCADA Designer
- Integration Engineer
- R&D Engineer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

CERTIFIED IN ELECTRICAL CAD DESIGNER



ELECTRICAL SYSTEMS

Electrical Components, voltage current, resistance Electric power, Power efficiency, Power factor Concepts of Analog & Digital Circuit, Concepts of Power Supply (AC & DC) Application of Semiconductor Conductors, Insulator, Relays

CONTROL PANEL

PLC Panel Architecture Different Types of Panels Basic of Panel Wiring, Specification & Physical Dimension of Component Mapping, Earthing & Cabling of Panels, Electrical Standard Procedures (IEEE, JIC IEC)

BASIC WORK FLOW

Design Environment Basic Workflow, Chapter exercise Project Manager Project Drawing List, Moving Through a Project, Copy Projects, Chapter exercise

AUTOCAD

Introduction to CAD, Disigning & Drafting, AutoCAD 2D/3D Concepts Exploring GUI, Panel Ribbon panel, Working Area Menu, Display Control, File Manager Drawing Setting Units Limits, Dimensions style Drawing Sketches : Line Circle, Arc, Ellipse, Rectangle Polygon, etc. Drawing setting Object Properties : Color Linetype, Matchprop etc Parametric Drawing

E-CAD SCHEMATIC

Introduction to Electrical CAD Electrical Design , Single wire components, Managing Circuit Workflow of Electrical CAD Attributes & Symbol builder Project manager, Panel Drawings, interface, Inserting editing, Numbering wires Using 3-phase ladders components, Using Circuit

SCHEMATIC EDITING

Basic Editing Utilities, Data Tools, Resequence and Retag Drawings, Schematic Symbol Annotation, Swap/Update Blocks, Insert a Schematic Component, Schematic Reports, Create a Panel Layout from a Schematic List Panel Footprints, Terminal Strip Editor, Panel Layout Annotation and Reports

SENSOR & PERIPHERAL

Electrical CAD Environment Project Properties, Drawing Properties Schematic Symbols Icon Menu System, Parts Catalog Database, Pin List Editor, Title Block Update Reference Files, Clipboard Circuit Builder, Editing, moving Panel layout footprints Multiple Drawing, PLC Wiring concepts, Using PLC symbols Setting up title blocks Generation Of Report



TOOLS COVERED



CAREER OPPORTUNITIES

- CAD Drafter
- ECAD Design Engineer

DURATION
100 HR

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

CERTIFIED IN PYTHON & DJANGO

CORE PYTHON

What is Python?, WHY PYTHON? Features – Dynamic Interpreted, Object oriented Embeddable, Extensible, Large standard libraries, Free and Open source, Why Python is Python applications, Keywords Identifiers, Constants / Literals Data types, Operators, Input & Output Operators, Control Statements, Data Structures or Collections, Strings, List, Tuple Set, Dictionary Collection Functions

ADVANCED PYTHON

Python Modules, Packages OOPs, Procedural v/s Object Oriented programming Encapsulation, Abstraction (Data Hiding), Overloading Exception Handling & Types of Errors, Regular expressions File & Directory handling Multi-threading & Multi Processing, Python Data Base Network Programming, Tkinter Turtle, Windows App's OpenCV

DATA ANALYTICS

Introduction Numpy, Scipy Arrays, Datatypes, Matrices N dimension arrays, Indexing and Slicing, Pandas, Data Frames, Merge , Join, Concat Matplotlib, Drawing plots

DJANGO

Introduction Of Django ,What is Web framework? Define MVT Design Pattern Difference between MVC and MVT , Models Layer, Django migrations, Raw SQL, search View Layer, View functions URL Confs, Shortcuts and decorators, Request and response objects File upload Template Layer, Built-in tags and filters Forms API, Built-in fields And widgets Internationalization & Localization Common Web Application Tools, SQL & SQLite Server, Super Admin Dashborad

WEB TECHNOLOGY

Introduction to HTML , Basic Elements, Attributes Headings Formatting, Links Head CSS , Images, Tables JavaScript, HTML XHTML HTML4 Drawbacks, CSS3 Introduction, CSS3 Modules Selectors, Box Model Backgrounds and Borders Text Effects, 2D/3D Transformations Animations Multiple Column Layout, User Interface, Introduction to javascript, Introduction of client side script, Introduction of javascript Cross browser issues. Declaration syntax of javascript, Statements Comments, Popup Boxes Alert, Confirm, Prompt Variables, Arrays Operators Variables Operators Arithmetic Assignment Comparison Logical Document object model Functions and types Conversion functions



django



TOOLS COVERED

CAREER OPPORTUNITIES

- Python Programmer
- Software Engineer
- Web Developer
- Data Analyst
- Machine Learning Engineer
- Software Developer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
CS/ IT / ECE / EEE
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

CERTIFIED IN AI-MACHINE LEARNING

ML FUNDAMENTALS

ML Common Use Cases
Supervised and Unsupervised Learning Techniques, Clustering Similarity Metrics Distance Measure Types: Euclidean Cosine Measures Creating predictive models, K-Means Clustering Understanding TF-IDF, Cosine Similarity and their application to Vector Space Model, Implementing Association rule mining Understanding Process flow of Supervised Learning Techniques Decision Tree Classifier Logistic Regression Text Mining, Sentimental Analysis

PYTHON

Python Overview, About Interpreted Languages Advantages / Disadvantages of Python pydoc Starting Python Interpreter PATH, Using the Interpreter Running a Python Script, Python Scripts on UNIX/Windows, Editors and IDEs, Using Variables Keywords, Built-in Functions Math Operators, Expressions

SUPERVISED

Introduction to Machine Learning, Understanding Data Processing, Getting started with Classification, Basic Concept of Classification Types of Regression Technic Classification vs Regression Types of Learning Multiclass classification using scikit-learn

UN-SUPERVISED

Supervised & Unsupervised Clustering in Machine Learning Different Types of Clustering Algorithm ML Algorithm, Analysis of test dataset, Algorithm Hierarchical, Clustering K-means Clustering, K-nn (K Nearest Neighbours) Principal Component Analysis Singular Value Decomposition, Independent Component Analysis

REINFORCEMENT

Reinforcement Learning Python Implementation using Q-learning, Thompson Sampling, Genetic Algorithm for Reinforcement Learning SARSA Reinforcement Learning Q-Learning in Python MONTE CARLO

REAL-WORLD ML

Real-world machine learning use cases, Speech recognition Customer service: Online chatbots, Computer vision This AI technology, Robotic process automation (RPA) Automated stock trading Fraud detection: Banks and other financial institutions

Tools & Library

Numpy, Scipy, Scikit-learn Theano, TensorFlow, Keras PyTorch, Pandas, Matplotlib



TOOLS COVERED

CAREER OPPORTUNITIES

- Python Programmer
- Data Engineer
- Machine Learning Engineer
- Data Analyst
- Data Scientist
- Business Intelligence
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

CERTIFIED IN AI-DATA SCIENCE

FUNDAMENTALS

Introduction to Data Science
Evolution of Data Science
Data Science Terminologies
Data Science vs AI/Machine Learning, Data Science vs Analytics, Data Preparation
Machine learning Model building Prediction with ML model, Analytics Classification
Types of Analytics, Diagnostic Analytics Predictive Analytics Prescriptive Analytics, What Is ML? ML Vs AI ML Workflow
Popular ML Algorithms
Clustering, Classification And Regression Supervised Vs Unsupervised

PYTHON

Python Overview, About Interpreted Languages
Advantages / Disadvantages of Python
pydoc Starting Python Interpreter PATH, Using the Interpreter Running a Python Script, Python Scripts on UNIX/Windows, Editors and IDEs, Using Variables
Keywords, Built-in Functions
Math Operators, Expressions

STATISTICS ESSENTIALS

Overview of Statistics
Exploratory Data Analysis
Introduction Measures Of Central Tendencies: Mean Median And Mode Measures Of Central Tendencies: Range Variance And Standard Deviation
Data Distribution Plot: Histogram Normal Distribution Z Value Standard Value Empirical Rule and Outliers
Central Limit Theorem

MACHINE LEARNING

What Is ML? ML Vs AI
ML Workflow, Popular ML Algorithms
Clustering Classification, Regression
Supervised Vs Unsupervised Logistic Regression, NumPy & Pandas functions
Core Numpy functions
Visualization Packages (Matplotlib)
Components Of A Plot, Sub-Plots Basic Plots
Line, Bar, Pie, Scatter

BIG DATA

Big Data Overview Five Vs of Big Data
What is Big Data and Hadoop
Introduction to Hadoop Components of Hadoop Ecosystem
Big Data Analytics Spark SQL HDFS
Big Data Storage, Business Intelligence

AWS CLOUD FOR DS

Introduction of cloud
Difference between GCC
AWS Service (EC2 and S3 service)
AWS Service (AMI)
AWS Service (RDS)
AWS Service (IAM), AWS (Athena service)
AWS (EMR), AWS (Redshift)
ML Modeling with AWS Sage Maker

Tools & Library

Ms Excel, Power BI, Tableau, Python, SQL Etc..



TOOLS COVERED

CAREER OPPORTUNITIES

- Python Programmer
- Data Engineer
- Machine Learning Engineer
- Data Analyst
- Data Scientist
- Business Intelligence
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
CS / IT ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

DURATION
320 HR

CERTIFIED IN JAVA FULL STACK

CORE JAVA

Introduction to Java and OOPS
Tokens-Comments, Identifiers
Keywords, Working with jar
Modifiers – File level, Access
level and Non-access level
Datatypes, Literals, Variables
Type Conversion, Casting &
Promotion, Operators and
Control Statements Method
Exception Handling and
Assertions

ADVANCED JAVA

Fundamental Classes/Object
Class, System, Runtime
Packages, OOP's, Procedural
v/s Object Oriented program
Encapsulation, Abstraction
(Data Hiding), Overloading
Exception Handling & Types of
Errors, Regular expressions
File & Directory handling, Multi
threading & Multi Processing
JDBC, SQL & Network
Programming

SPRING CORE MODULE

Introduction to IOC
Introduction to Spring
Container/ IOC Container
Types of Dependency
Injections, Bean Scopes, Bean
Wiring, Bean Life Cycle, Spring
Core Module with Annotations

SPRING BOOT

Introduction to Spring Boot
Spring Boot Starters, Boot
Application, Spring JDBC /DAO
Spring AOP Module, Spring
MVC Spring Security, Spring
Data

HIBERNATE

Hibernate Architecture (Object
Relational Mapping), Hibernate
Data Types Hibernate
Resources Object Life cycle in
Hibernate CRUD operations
using Session, methods
Integrating Hibernate with
Servlet

WEB TECHNOLOGY

HTML Basics, Introduction
Parts in HTML Document
Editors, Elements Attributes
Headings Formatting, Links
Head CSS, Images, Tables
JavaScript, HTML HTML4
Drawbacks, CSS3
Introduction, CSS3 Modules
Selectors, Box Model
Backgrounds and Borders
Text Effects, 2D/3D
Transformations Animations
Multiple Column Layout, User
Interface, Introduction to
javascript, Introduction of
client side script, Introduction
of javascript Cross browser
issues. Declaration syntax of
javascript, Statements
Comments, Popup Boxes
Alert, Confirm, Prompt
Variables, Arrays and
Operators, Variables
Operators, Arithmetic
Assignment, Comparison
Logical, Document object
model, Functions and types
Conversion functions

TOOLS COVERED



CAREER OPPORTUNITIES

- Java Programmer
- Software Testing
- Frontend developer
- Backend developer
- Software Engineer
- Software Developer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
CS / IT/ ECE / EEE /
Mechatronics / Auto
Aero & Mechanical

DURATION
320 HR

CERTIFIED IN .NET FULL STACK



OVERVIEW OF .NET

Introduction to .Net, Net Framework – BCL & CLR | Key design goals CLR, CTS, MSIL & other tools..Net Framework Visual Studio, Advantages Disadvantages Why C#/ Why Not C# Where does C# Fit in C, C++ to Visual C# Features of C# .NET Namespaces

VISUAL C#.NET

C#.Net Program Design Variables and types Value types and reference types (CTS) Strings and arrays The Console class String formatting Classes/Object Class, System, Runtime Packages, OOPs, Procedural v/s Object Oriented program Encapsulation, Abstraction (Data Hiding), Overloading Exception Handling & Types of Errors, ADO.Net Components Data Sources And .Net Data Providers, Windows Services ,Crystal Reports, Application Deployment, SQL Server DBMS, DLL, DML & TSQL Programming

ASP.NET

ASP to ASP.Net, Asp.net to web 2.0 ASP.Net as Framework, Namespaces ASP.Net – New Scenario in development process with IDE VS.NET Web Pages to Web Forms, HTML – ASP.NET, State management– an Important Objective Understanding the ASP.NET Execution Scenario C#.Net role in ASP.NET ASP.NET WEB APPLICATIONS

ASP.NET MVC

Introduction to ASP.NET MVC 6 Introduction to MVC 6 NET Web Forms (vs) ASP.NET MVC Advantages and disadvantages of each Determining when-to-use which one List of Versions of ASP.NET MVC Differences between versions of installing ASP.NET MVC Architecture Controller and action method What is View What is Model Request Flow in ASP.NET MVC

WEB TECHNOLOGY

HTML Basics, Introduction Parts in HTML Document Editors, Elements Attributes Headings Formatting, Links Head CSS, Images, Tables JavaScript, HTML Drawbacks CSS3 Introduction, CSS3 Modules, Selectors, Box Model, Backgrounds and Borders, Text Effects, 2D/3D Transformations Animations Multiple Column Layout, User Interface, Introduction to javascript, Introduction of client side script, Introduction of javascript Cross browser issues. Declaration syntax of javascript, Statements Comments, Popup Boxes Alert, Confirm, Prompt Variables, Arrays and Operators, Variables Operators, Arithmetic Assignment, Comparison Logical, Document object model, Functions and types Conversion functions



TOOLS COVERED

CAREER OPPORTUNITIES

- .NET Programmer
- Frontend developer
- Backend developer
- Software Engineer
- Software Developer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
CS / IT / ECE / EEE
Mechatronics / Auto
Aero & Mechanical

DURATION
320 HR

CERTIFIED IN WEB FULL STACK – MERCAJN



HTML / HTML 5

Introduction To Web development, Development Tools Element and Tag In HTML Core HTML Media and Forms Modern HTML Emmet, SEO

CSS AND CSS 3

Introduction To CSS, Basics CSS, Position in CSS, Flexbox In CSS, Grid, Media Query, CSS Selector, Advance CSS

JAVASCRIPT/ JQUERY

Introduction to JavaScript Enabling JavaScript in Browsers, Functions, RegExp Events, Document, Object Model or DOM, Form Validation JavaScript Animation

BOOTSTRAP

Bootstrap Containers, Grid System, Layouts Typography Tables, Lists, Forms, Buttons Images, Cards, Media Objects Icons, Navbar BreadCrumbs Spinners Modals, Dropdown Tabs, Accordion, Carousel

DATABASE – MYSQL

MySQL Introduction, DBMS SQL Queries, Create, Alter Update, Insert, Delete Grant Revoke Select In Between PHP with MYSQL Connector

NODE JS

Intro To NodeJs, Modules creation and loading, of modules, Path Module, OS Module, File System Module

MONGO DB

Schemas, Models, Comparison Query Operators, Logical Query Operators, Regular Expressions, Counting Pagination

EXPRESS

Introduction to Express, Handling HTTP GET & POST Requests, Environment Variables, Input Validation Handling HTTP PUT/PATCH & DELETE Requests, Express Middleware, Creating Custom Middleware, Built-in Middleware, CORS

REACT

JavaScript JavaScript Image Map, JavaScript Browsers Compatibility, Web Design React, web design node React – Event, React JSX Node.js, Node.js Global Objects, Node.js V8.

ANGULAR

Angular JS Environmental Setup, MVC Architecture Directives, Expressions Controllers, Filters, Tables HTML DOM Modules Forms Includes, AJAX Views, Scope Services, Nav Menu, Switch Menu, Order Form, Search Tab Chart Application

Server Side Program

PHP Syntax, Comments Variables, Global Variables Constant Data Types Form Keywords, Get Methods, Post method Frameworks HTML Form action OOPS in PHP

TOOLS COVERED



CAREER OPPORTUNITIES

- Web Designer
- Frontend developer
- Backend developer
- React Developer
- Angular Developer
- PHP Developer
- Web App Developer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
CS / IT / ECE / EEE
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

CERTIFIED IN UI / UX DESIGNER

USER EXPERIENCE

Module 1: Introduction to User Experience, Design Thinking User centered design principles ,Starting an UX student project Role, Requirement & ROI Feature prioritization, Process models, Waterfall Process model

Module 2: Research User experie, User experience research techniques, User personas Creating scenarios Empathy mapping, Stakeholder interview, User stories

Module 3: Analysis, Competitor analysis User centered analysis, Data analysis, Heuristic analysis,Task flow evaluation Attributes, Goals, Perspectives & Pain points Google analytics

Module 4: Design strategy Effective content strategy Low fidelity sketching Paper prototype, Site maps | Process diagrams

Module 5: Sketching, Wireframe & Prototype Prototype Web, Mobile & Tablet

Module 6: Testing, Case studies

USER INTERFACE

Module 1: Introduction to User Interface design, UI design process, Design psychology Web, Mobile & Tablet visual designing

Module 2: Visual design Creating storyboards Product design, Colour theory Layouts, Typography Iconography, Infographics Branding design, Image editing Web template design, Creating UI elements, UI Kits & Image widgets

Module 3: Design tools
Photoshop - Illustrator
Adobe XD - Figma
Sketch - InDesign

Module 4: Google Material design

Module 5: Visual design output & Documentation Visual design output & Documentation

Module 6: High impact presentations, Portfolio

WEB TECHNOLOGY

HTML Basics, Basic Elements Formatting, Links, Head, CSS Images, Table, JavaScript HTML Introduction, CSS3 Modules, Selectors, Box Model, Backgrounds and Borders, Text Effects, 2D/3D Transformations Animations Multiple Column Layout, User Interface, Introduction to javascript, Introduction of client side script, Introduction of javascript Cross browser issues. Declaration syntax of javascript, Statements Comments, Popup Boxes Alert, Confirm, Prompt Variables, Arrays and Operators, Variables Operators, Arithmetic Assignment, Comparison Logical, Document object model, Functions and types Conversion functions

TOOLS COVERED



CAREER OPPORTUNITIES

- Graphics Designer
- UI Designer
- Interaction Designer
- Motion Designer
- UX Researcher
- AR VR Designer
- UX Engineer

ELIGIBILITY

BE / BTech / Diploma
ECE / EEE / E&I
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

CERTIFIED IN AWS & DEVOPS

CLOUD COMPUTING

Introduction to Cloud Computing, Why Cloud Computing?, Benefits of Cloud Computing, Public Cloud Private Cloud, Hybrid Cloud Service Models (IAAS, PAAS SAAS)

AWS CLOUD

Introduction to AWS Classic Data Center, Virtualization Cloud and Cloud Computing Cloud Computing Service Models Deployment Models Service Comparison: AWS Azure, Global Infrastructure AWS Regions and Replication of data between the Regions Availability Zones and High Availability PoP Locations Signup an AWS Free Tier Account Different Amazon Web Services Ways to access AWS CLI, Console, and SDKs Explore Management Console and Configure AWS CLI AWS CloudShell

CLOUD SERVICE

Identity & Access Management (IAM) Managing Users with IAM Managing IAM Policy and its Elements, Amazon Elastic Compute Cloud (EC2) and Its Benefits Amazon Machine Image (AMI) Key-pair Hardware Tenancy - Shared Networking Layer in EC2: VPC Elastic Network Interface (ENI) and Its Attributes Public IP vs. Elastic IP Instance Store Elastic Block Store (EBS), Cloud Storage Simple Storage Service (S3) and Versioning, Replicate S3 Transfer Acceleration Lifecycle Policy of S3 Bucket Virtual Private Cloud (VPC) and Its Benefits Default and Non-default VPC Major Steps to Configure VPC IP Address CIDR- Classless Inter-domain Routing Subnet Private and Public Subnet Internet Gateway and Route Tables Security Group with VPC

DEVOPS

Introduction to DevOps Benefits of working in a DevOps environment Lifecycle, Stages DevOps Delivery Pipeline Version Control, Git Introduction, Git Installation Commonly used commands in Git Working with Remote repository, Branching and merging in Git, Merge Conflicts, Stashing, Rebasing Reverting, and Resetting Git Workflows Introduction to Maven, Maven Architecture Configuration Management Using Ansible, Introduction to Ansible, Ansible Architecture Inventory Management Ansible Modules Containerization using Docker Docker Docker Architecture Container Lifecycle Docker CL Port Binding Detached and Foreground Mode Dockerfile Dockerfile Instruction Docker Image Orchestration Kubernetes! Kubernetes Core Concepts



kubernetes



Jenkins



GitHub



ANSIBLE



Jira

TOOLS COVERED

CAREER OPPORTUNITIES

- Cloud Engineer
- Operational Support Engineer
- System Integrator
- Cloud Developer
- SysOps Admin
- Integration Engineer
- Devops Engineer
- Solution Architect

ELIGIBILITY

BE / BTech / Diploma
CS/ IT / ECE / EEE
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

CERTIFIED IN BUSINESS ANALYST

BUSINESS ANALYST

Introduction to Business Analysis, Planning Elicitation Analysis Requirements Documentation Management Communication Case Studies from the real time projects UML 2.0 training Hands on experience on a real time project

PYTHON

Python Overview, About Interpreted Languages Advantages / Disadvantages of Python, Running a Python Script, Python Scripts on UNIX/Windows, Editors and IDEs, Using Variables Keywords, Built-in Functions Math Operators, Expressions OOP's, Encapsulation Abstraction Data Hiding Overloading Exception Handling & Types of Errors Regular expressions File & Directory handling Multi-threading & Multi Processing, Python Data Base Network Programming

POWER BI

Introduction to Power BI Desktop and Data Transformation, Data Analysis Expression (DAX), Data Visualization, Power BI Service Connectivity Modes, Report Server, Analytics in Power BI Sales and Finance

TABLEAU

Data Preparation using Tableau Prep, Data Connection with Tableau Desktop, Basic Visual Analytics, Calculations in Tableau, Advanced Visual Analytics, : Level Of Detail (LOD) Expressions, Geographic Visualizations, Dashboards and Stories

SQL SERVER

Introduction to RDBMS and SQL Server, Database Normalization, DDL, and DML Commands, Querying Data using Built-in Functions and T-SQL, Backup & Restore in SQL Server

MS EXCEL

Overview of Advanced MS Excel, : Custom and Conditional Formatting, Advance Functions and Formulas, Advanced Data Tools, Data Analysis Introduction to Macros, Data Security, Working with Advanced Excel, power query

STATISTICS ANALYTICS

Understanding the Data Probability and its uses Statistical Inference, Data Clustering, Testing the Data Regression Modelling, Data Manipulation, Python Revision (numpy, Pandas, scikit learn matplotlib) etc.



TOOLS COVERED

CAREER OPPORTUNITIES

- Business Analyst
- Business Data Analyst
- Process Analyst
- IT Business Analyst
- Functional Consultant
- Integration Engineer
- Business Solution Manager
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
CS /IT / ECE / EEE /
E&I Mechatronics /
Auto Aero & Mech

DURATION
240 HR

CERTIFIED IN DIGITAL MARKETING

DIGITAL MARKETING

Setting marketing objectives
Market & Competitor
Research Understanding the
marketing funnel & customer
journey Identifying target
audience segments Creating a
Buyer Persona Developing a
value proposition Deep dive
into important terms &
metrics in digital marketing
Understanding Media- Paid
Shared, Owned, and Earned
Overview of digital marketing
channels - Inorganic and
Organic Choosing the right
channel mix for your business
Case studies of each channel

PAID ADVERTISEMENT

Media Planning Google PPC
Facebook Ad manager
Youtube Ads & Other Paid Ads
Conversion Rate Optimization
Customer Relationship
Management, Blogging
Marketing, Freelancing
Portfolio, Personal Brand
Building

SEO / SMO / SMM

Introduction To Search Engine
Optimization, How Did Search
Engine work?, SEO
Fundamentals & Concepts
Understanding The SERP
Google Processing Social Media
Optimization (SMO)
Introduction To Social Media
Networks, Types Of Social
Media Websites, Social Media
Optimization Concepts
Facebook Page, Google
LinkedIn, YouTube, Pinterest.

ANALYSIS & RESEARCH

Market Research. Keyword
Research And Analysis, Types
Of Keywords, Tools Used For
Keyword Research Localized
Keyword Research Competitor
Website Analysis, Choosing
Right Keywords To The Project
Getting Started With Google
Analytics, Navigating Google
Analytics, Traffic Sources
Content, Visitors, Goals &
Ecommerce, Actionable Insights
And The Big Picture, Live Data
Demographics, Google
Webmaster Tools

CONTENT WRITING

Introduction To Blogs, Setting
Up Your Own Blog, The
Importance Of SEO, Content
Duration & The Art Of Content
Planning, Creating A
Compelling Personality For
Your Content, How To
Monetize Your Blog

AFFILIATE MARKETING

What is Affiliate Marketing?
Benefits of Affiliate Marketing
Affiliate Marketing
Networks, Different
Techniques used for Affiliate
Marketing Strategies used for
getting Traffic

GRAPHICS & UI DESIGN

Adobe Photoshop
Wordpress, Canva, Nicepage
Mobirise, Poster & Flyer
Digital Media Content, HTML
CSS, Images, Tables
JavaScript, Selectors
Locators & Other SEO Tags &
Technics

TOOLS COVERED



CAREER OPPORTUNITIES

- Website Builder
- Social Media Marketer
- Digital Advertising
- SEO Optimizer
- Content Writer
- Digital Marketer
- Graphic Designer

ELIGIBILITY

BE / BTech / Diploma
CS/ IT / ECE / EEE
Mechatronics / Auto
Aero & Mechanical

DURATION
240 HR

CERTIFIED IN SOFTWARE TESTING

MANUAL TESTING

Software Engineering, SDLC (Software Development Life Cycle) Models Testing Requirments Testing Levels & Techniques, Unit Testing Integration Testing, Top Down and Bottom Up Approach System Testing, User Acceptance Testing White Box Black Box – Testing Types Module Testing, Functional Mutation Testing, Regression Security Testing Load/Performance Testing Verification & Validation V Model, Types Of Reviews

CORE JAVA

Introduction to Java and OOP's Tokens-Comments, Identifiers Keywords, Working with jar Modifiers – File level, Access level and Non-access level Datatypes, Literals, Variables Type Conversion, Casting & Promotion, Operators and Control Statements Method Exception Handling and Assertions

ADVANCED JAVA

Fundamental Classes/Object Class, System, Runtime Packages, OOPs, Procedural v/s Object Oriented program Encapsulation, Abstraction (Data Hiding), Overloading Exception Handling & Types of Errors, Regular expressions File & Directory handling, Multi threading & Multi Processing JDBC, SQL & Network Programming

SELENIUM

Selenium Automation Tool Java with OOP's , Selenium Features And IDE Overview Record And Run, Assertion Or Verification Matching Text Patterns Locating Elementd Installing & Uisng Fire Bug To Inspect Elements,Understand ID Name, X Path, Attribute Text And Dynamic, FireBug Firepath,Eclipse, Jenkins Locators, Cucumber Junit Maven

TEST NG

Selenium Integrated Development Environment (IDE),Selenium Remote Control (RC), Complete Web Driver, Real script from scratch Running the Test Checking the reports generated by TestNG Annotations used in TestNG Prioritizing Tests TestNG with Excel data Create Testng.xml

WEB TECHNOLOGY

HTML Basics, Attributes Headings, Formatting, Links Head CSS , Images, Tables JavaScript, HTML, CSS3 Introduction, CSS3 Modules Selectors, Types of Element Locators, Writing Xpath Manually, Types of Xpath findElement & FindElements Element locators on different browsers.

TOOLS COVERED



TestNG



CAREER OPPORTUNITIES

- Manual Tester
- Programmer
- Automation Tester
- Sr. Automation Tester
- Manager QA

20

DURATION
160 HR

ELIGIBILITY

BE / BTech / Diploma
CS / IT / ECE / EEE
Mechatronics / Auto
Aero & Mechanical

DIPLOMA IN MEP ENGINEER

MECH - HVAC

Introduction to MEP & HVAC, Function of HVAC, Heat & its type, Mode of Heat Transfer, Metric & Imperial unit's & its conversion Refrigerant cycle, Ventilation system design & Drafting Working principles of AC Psychrometric chart, Air Distribution system, Damper & its type, Duct Design & Drafting, Heat Load Estimation (E-20), VRF/VRV refrigerant pipe sizing Types of Chiller, Chiller pump Refrigerant piping & Fittings selections, Indoor and outdoor Equipment & Accessories Selection.

SOFTWARE

Duct Design, Heat load Estimation, Air Terminal unit Drafting, Concept Drawing SLD to DD drawing, Ducting Layout, Chilled water Piping Layout VRF system Layout

ELECTRICAL

Electricity Generation, Transmission Wiring and cable management systems Conduit Layout Design Load schedule & Load balancing. Lighting load estimation/design of panel. Power distribution system Types & selection of Circuit Breakers. Coordination with HVAC, Plumbing, LT Panel Board Design. Calculating the Total power requirements Transformer selection & Design calculations. Voltage Drop calculations. Earthing & lightening protection system Transformers & generators (HT) Project Planning Estimation & Preparation of BOQ.

PLUMBING

Introduction to MEP & Plumbing, Water quality standard, Supply system Types of Tank, Water demand calculations UGS Design, DHT Design, Out door Pipe selection Pump Design, Types of Fixtures, Indoor pipe selection Drainage system, Trap & its type, Single & Double stack system, Ring main system Individual & Common Vent system, Man Hole Design, Septic Tank Design, Sockpit Design, Water Treatment Plant Sewage Treatment Plant

FIRE FIGHTING

Introduction Fire Fighting Fire Triangle, Types of Fire as per NFPA, Types of Detectors Types of sprinkler Over view on Refuge Area Stairwell Pressurization

TOOLS COVERED



CAREER OPPORTUNITIES

- CAD Draftersman
- HVAC Technician
- HVAC Design Engineer
- MEP Engineer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma Mechanical, EEE

DURATION
240 HR

CERTIFIED IN HVAC ENGINEER

MECH - HVAC

Introduction to MEP & HVAC
Function of HVAC, Heat & it's type, Mode of Heat Transfer, Metric & Imperial unit's & its conversion, Refrigerant cycle, Ventilation system design & Drafting, Working principles of AC, Psychrometric chart, Air Distribution system, Damper & it's type, Duct Design & Drafting, Heat Load Estimation (E-20), VRF/VRV refrigerant pipe sizing
Types of Chiller, Chiller pump Refrigerant piping & Fittings selections, Indoor and outdoor Equipment & Accessories Selection.

CALCULATION

Calculation : Duct Design
Heat Load Calculation as per E-20 Sheet Air Terminal Units selection, Fan as per ESP

DRAWINGS

Architecture Cleaning & Area statement Selection & Positioning ATU (Dynamic Block) using Catalogue & software Duct Design, Duct Routing & Drafting as per standard for Live Projects
Ventilation system Design & Drafting Selection & Drafting Accessories & Equipments like VCD, FD, MSFD, SD, BDD NRD, SAT IDU's & ODU's Positioning & Routing (Multistorey buildings) using Shafts, etc.

SOFTWARE

Duct Design, Heat load Estimation, Air Terminal unit Drafting, Concept Drawing SLD to DD drawing, Ducting Layout, Chilled water Piping Layout VRF system Layout BOQ & OLE, Equipment Schedule, Damper schedule ATU Schedule

TOOLS COVERED



CAREER OPPORTUNITIES

- CAD Draftersman
- HVAC Technician
- HVAC Design Engineer

ELIGIBILITY

BE / BTech / Diploma
Mechanical

DURATION
120 HR

CERTIFIED IN SP3D – E3D – PDMS

SP3D

Introduction About Piping & SP3D, Sp3d Design Concept Creation & Editing Of Equipment Grid System And Grid Co-Ordinate System Creation & Editing Structural Member Creation & Editing Electrical Components Creation & Editing Concepts Hvac System Creation Editing Options Hanger & Supports Report Generation (Mto) Using Template Space Management Draft Data Base Export & Import Sp3d Commands & Overview

E3D

Introduction About Piping & E3d, E3d Design Concept, Creation Editing Of Equipment Grid System And Grid Co-Ordinate System Creation & Editing Structural Member Creation & Editing Electrical Components Creation & Editing Concepts Hvac System Creation & Editing Options Hanger & Supports Report Generation (Mto) Using Template Space Management Draft Data Base Export & Import E3d Commands & Overview

PDMS

Introduction About Piping and Pdms PDMS Design Concept, Creation & Editing Of Equipment & Primitives Pipe Work Modelling, Creating Structural Hierarchy, Creating & Editing Structural Elements Electrical Components Creation & Editing Concepts HVAC Machines and Components Creation Hanger & Supports, Report Generation (MTD) Using Template, Spooler & ISO Draft Data Base Export & Import PDMS Commands and Overview

TOOLS COVERED

SP3D
E3D
PDMS

CAREER OPPORTUNITIES

- SP3D ENGINEER
- E3D ENGINEER
- PDMS Engineer

DURATION
240 HR

ELIGIBILITY

BE / BTech / Diploma
Petroleum,
Mechatronics / Auto
Aero & Mechanical

CERTIFIED IN PHE ENGINEER

PLUMBING DESIGN

Introduction of Plumbing
Types of Pipes Used in Plumbing, Types of Valves and Fittings Used in the Plumbing Industry, Plumbing Fixtures (Flush Tank & Valve) Hazen William & Darcy Equation, Manning's Equation Water Distribution System Design, Types of System Manual Method of Water Distribution Calculation WSFU Method for determining Pipe Sizes Water Balance Diagram Sump Pump Calculation Gravity Line Distribution Water Drainage System Design, Types of Stack Soil Waste & Vent Pipe DFU Method for determining Pipe Sizes, Typical Toilet Drawing, Sizing of Manholes & IC Chamber, P Trap, S Trap Grease Trap, Interceptor Floor Drain, STP Design Calculations

FIRE FIGHTING DESIGN

Introduction to Fire Fighting System, Code Understanding of Sprinkler & Hydrant System, Basics of Sprinkler System, Types of Sprinkler Heads, Classification of Building, Types of Sprinkler System (Mist, Foam, Spray System), Deluge Valve & Preaction Valve System Sprinkler & Hydrant System Design, Hydraulic Calculation using ELITE Software, Pump Head Calculation, Gas Suppression System, Code requirement for Gas Suppression System, FM 200 System Selection & Calculation, NOVEC 1230 Gas Calculations, CO2 Gas Calculations, Fire Alarm System, Types of Detectors Types of Fire Alarm System CCTV Selection, PA Speakers Selection

BOQ & DOCUMENTATION

Understanding BOQ for Plumbing & Fire Fighting Design Basis Report Preparation for PL & FF Quantity Take off for Plumbing & Fire Fighting AutoCAD, Basic Commands used in Plumbing & Fire Fighting, Schematic Drawing Presentation, Floor Plans Presentation, Tools: Basic Layouts by AutoCAD, ELITE Software for Hydraulic Calculations for Sprinkler and hydrant, WSFU & DFU Excel Sheet for Pipe Sizing for Plumbing System, Excel Sheet for Project Calculations for Plumbing and Fire Fighting System

TOOLS COVERED



CAREER OPPORTUNITIES

- CAD Draftsman
- Piping Design Engineer
- PHE Engineer

ELIGIBILITY

BE / BTech / Diploma
Mechatronics, Civil

DURATION
140 HR

CERTIFIED IN DESIGN ENGINEER

SKETCHER

Getting Started With Sketch
Creating Centrelines, Lines
Constructing Ellipse, Circle
Arc Creating Slots, Polygon
Parabola, Creating a Spline
Equation Driven Curve, Point
Creating Text, Construction
Geometry Rapid Sketch

PART MODELING

Terminologies Used In Part
Modelling Environment,
Entering The Part Module
Choosing The Sketch Plane
Extruding Boss / Base
Features, Revolving Boss /
Base Features, Creating
Sweep Features, Creating
Loft Features, Creating Cut
Features, Selecting
Geometrics

REFERENCE GEOMETRY

Reference Planes, Creating
New Planes, Reference Axes
Points, Coordinate Systems
Editing Reference Geometries

ASSEMBLY MODELING

Types Of Assembly Design
Approaches, Working With
Solid Works Assembly
Bottom-Up Approach
Positioning The Components
In Assembly Assembly Mates
Standard Mates, Advanced
Mates, Mechanical Mates
Smart Mates, Mate Reference
Replacing The Assembly
Components, Assembly Mirror
Creating Exploded View
Physical Simulation, Top
Down Design, Assembly
Performance Configuration In
Assembly Smart Components
Smart Fasteners

REVERSE ENGINEERING

Scanning /measure importing,
and processing of data, Mesh
processing, Creating and
editing curves from the scans
Creating surface from curve
geometry & editing them
3D modeling with GD & T

SURFACE MODELING

Surface Features, Extrude
Features, Revolved Surface
Swept Surface, Lofted Feature
Boundary Surface, Planar
Surface, Offset Surface
Radiate Surface, Extending A
Surface, Surface Fill, Ruled
Surfaces, Trimming Surface
Mid- Surface, Replacing Faces
Deleting Faces, Un-Trimming
Surface, Knit Surface
Thickening A Surface, Move
Faces

SHEET METAL MODELING

Fundamentals Concepts Of
Sheet Metal, Using Sheet
Metal Tools, Base Flange
Edge Flange, Miter Flange
Creating Hem, Log, Break
Corner/Corner-Trim, Closed
Corners, Rip, Sketched Bend
Unfold/Fold, Flattening Sheet
Metal Bends, Forming Tools
Cross Break, Welded Corner
Inserting Corner Trim Creating
Lofted Bends Creating Sheet
Metal Part By Converting A
Solid Body

TOOLS COVERED



CAREER OPPORTUNITIES

- CAD Draftersman
- Reverse Engineer
- Design Engineer
- R&D Engineer
- Project Manager

ELIGIBILITY

BE / BTech / Diploma
Mechanical, Aero
Mechatronics, Auto

DURATION
240 HR

REVIT ARCHITECTURE

Introduction to Autodesk Revit Architecture, User Interface Tour, Browsers Bars, Palettes and Windows Revit Architecture Help, Starting a New Architectural Project Navigation Tools, Configuring Global Settings

BUILDING COMPONENTS

Creating Architectural Walls Adding Doors, Adding Windows and Wall Openings Working with Selection Sets Editing Tools, Grouping Elements, Retrieving Information About Elements Working with Levels Working with Grids, Working with Reference Planes and Work Planes, Controlling the Display of Elements Creating Floors, Creating Roofs Shape Editing Tools, Creating Ceilings, Adding Rooms

SITE FEATURES

Working With Site Features Property Lines and Building Pads, Adding Site Components, Understanding Massing Concepts, Creating Massing Geometry in the Family Editor, Editing Massing Geometry in the Family Editor Massing in the Conceptual Design Environment, Creating Massing Geometry in a Project, Creating Building Elements from Massing Geometry, Creating Families

DRAWING & PLOTTING

Creating Drawing Sheets Creating Duplicate Dependent Views, Printing in Revit Architecture, 3D Views Dynamically Viewing Models with Navigation Tools Orienting a 3D View Generating Perspective Views Using a Section Box

ADVANCED FEATURES

Creating Structural Components, Generating Multiple Design Options Using Area Analysis Tools Masking Regions, Creating Displaced Views, Color Schemes, Working with Project Phasing Tools Work-sharing Concepts Elements Families, Browsers Generating Shadows, Creating Solar Studies, Working with Point Clouds, Revit Architecture Interoperability Linking Building Models and Sharing Coordinates, Working with Linked Models Rendering in Revit Architecture, Working with Materials, Lights, Decals and Entourage, Rendering Settings, Creating a Walkthrough Autodesk 360 Rendering

- CAD Drafter
- Building Designer
- Interior Design
- Design Architect
- Project Manager

CERTIFIED IN INTERIOR DESIGN

3DS MAX

Introduction 3Ds Max
Drawing Tools, Units & Help
Selection Tools, Explorer
Tools ,3d Objects Standard &
Extended Primitives, Working
with Architectural Objects
Architectural Objects
Doors, Windows Stairs 2D
Shapes Splines, Extended
Splines Modifying 2D Shapes
Modifying Splines
Selections, Geometry Rollout
Materials and Maps
Rendering Images, Material
Tools, Material Properties
Other Materials Maps, 3D
Mesh Objects, Modifying 3D
Mesh Objects Edit Geometry
Rollout, Editable Poly
Objects, Editable Poly
Rollouts, Graphite Modeling
Technique Polygon Modeling
Panel, Edit Panel, Geometry
Panel Modify Selection
Panel, Loops Panel,

NURBS Modeling, Curves and
Surfaces, NURBS Parameter
Rollout, Compound Objects
Compound Objects, Modifiers
Mesh Modifiers, Geometry
Modifiers, Material and Map
Modifiers, Lights and
Cameras, Lights, Cameras
Animation Basics, Animation
Controls Rendering an
Animation, Systems,
Hierarchy, and Kinematics
Ring Array Systems, Lighting
Systems, Hierarchies, Bone
Systems, Rigid Body
Dynamics and Helpers
Body Dynamics, Constraints
Controls and Tools, Helpers
Particle Flow, PF Source
Particle Systems and Space
Particle, Systems, Particle
Mesh, Space Warps
Deflector Space Warps
Extended Space Warps

VRAY FOR 3DS MAX

Interface Overview, 3ds max
Interface, Vray Interface
Vray Light Lister, Rendering
Engine settings Vray RT, Vray
Production, Image Sampling
Vray Light Setting, Vray & 3ds
max Light Part, GI
Environment, Standard Light
Spot light Parameters, Sun &
Parameters. Sky Light, Vray
Camera, Vray Physical Cam
Focal Length, Exposure
Control, Depth of field
White Balance, Vray Material
Part, Modifier, Vray
Displacement MOD, Render
Elements, Ambient Occlusion
Vray Reflection, Compositing
Hue & Saturation, Blur Effect

TOOLS COVERED



CAREER OPPORTUNITIES

- CAD Designer
- Designer Engineer
- Interior Designer

27

ELIGIBILITY

BE / BTech /
Civil , Arch

DURATION
80 HR

INTERVIEW
PREPARATORY
MODULE

PRACTICAL
EXERCISES
WITH CURRENT
TECHNOLOGY

100%
PLACEMENT
ASSISTANCE



REAL TIME
PROJECT
EXPERIENCED
MENTOR

INTERVIEW
PREPARATION
[APTITUDE &
SOFTSKILLS]

ONE TO ONE
COACHING FOR
SPECIFIC
REQUIREMEN

**“ JOIN NOW TO BE A
PART OF THE
FASTEST GROWING
ENGINEERING SECTOR ”**



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