

## **National Institute of Electronics & Information Technology** ${\color{red} \textbf{Chandigar}} \\ \text{(Under Ministry of Electronics and Information Technology, Govt. of India)}$



## **Certified Blockchain Professional Course Contents**

Module No.	Blockchain Technology Associate	
Module 1	<ul> <li>Introduction to Blockchain</li> <li>Blockchain – fundamentals, evolution-history, uses, application areas</li> <li>Blockchain benefits and challenges</li> <li>Cryptographic Algorithms, Public-Private key, Digital Signature, Digital Certificates, Hashing</li> <li>Blockchain components and applications, Blocks, transactions, distributed ledger, Mining</li> <li>Proof of work, consensus protocol, The most prominent consensus mechanisms</li> <li>Introduction to Bitcoin, mining and trasactions &amp; its usage</li> <li>Blockchain Use-cases</li> <li>Blockchains Types: Public, Private,, Consortium</li> <li>Domain specific Blockchain Applications – FinTech, Internet of Things(IoT), Energy, Industrial &amp; Manufacturing, Healthcare, Academics</li> <li>Linux Commands, basic shell programming</li> <li>HTML, CSS, Java Script for front end development</li> </ul>	
	Blockchain Ethereum Developer	
Module 2	<ul> <li>The Ethereum ecosystem,</li> <li>What is Ether, an account, a Faucet</li> <li>What is Gas, EVM, Consensus Model: Proof of work, Proof of Stake</li> <li>Ethereum Wallet working, Getting Ethers, Purpose of Mining</li> <li>Mining hardware and Mining Incentives</li> <li>Implementing Blockchain using Python</li> <li>Solidity Language, Data types, Functions, Hash Functions, Mappings</li> <li>Enumerations, Writing Contracts, Contract Classes and conditions</li> <li>Setting up Private Blockchain Environment using Ethereum Platform</li> <li>Ganache Output for Transaction Migration</li> </ul>	



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Module No.	Blockchain Apps Developer	
Module 3	<ul> <li>Solidity: Creating Events, Inheritance and abstract contracts</li> <li>Executing contracts with Meta Mask</li> <li>Ethereum Networks, Creating a Genesis Node</li> <li>Types &amp; Optimization</li> <li>Debugging, Contract Design</li> <li>Developing and Deploying Smart Contracts</li> <li>Front End Development - NodeJS, Flask, Javascript</li> <li>GoLang for developing dApps</li> </ul>	
	Blockchain Hyperledger Fabric Developer	
Module 4	<ul> <li>Hyperledger – Introduction, Architecture</li> <li>Hyperledger Projects- Fabric, Sawtooth, Iroha, Burrow</li> <li>Understanding Hyperledger Fabric and its Architecture</li> <li>Hyperledger Functionalities and Docker</li> <li>Hyperledger components – channel, contract, chaincode.</li> <li>Assets, Participants and Transactions in Hyperledger Composer</li> </ul>	

## **Contact Us**

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