Intro to Crypto & Blockchain

Course description:

Step by step this course explains how to analyze, trade and build your own Blockchain tokens. No programming experience is required. 70% of this workshop is gathering and researching Crypto data and 30% is programming for those who want to build their own Blockchain solutions. This helps you to build your way into Crypto investments. We will start from the basics of Blockchain and gradually build up your knowledge to create your own Ethereum token and trading strategies.

Using simple games and real life analogies, we explain how Blockchain is constructed and why it cannot be altered as time passes. Also we will build our own tools to automate the process of gathering and analyzing Crypto contracts and historical data.

We will **examine and test a couple of Crypto trading strategies, using real world testing networks. Using Python and Solidity, we will build our own** crypto data analytics and investment **solutions. Even if you have no previous coding experience, our experienced instructors will guide you step by step so by the end of this workshop you would have your own Blockchain program.**

Each session is followed by 30 minutes free debugging support, for those who would be building their own Blockchain solutions.

Who should take this course:

Anybody interested in Blockchain technology and Cryptocurrencies. No previous programming or technical knowledge is required. Crypto investors and traders would benefit by understanding the fundamentals and techniques of Blockchain technology. Entrepreneurs and developers who are interested in launching their own contracts or Crypto tokens.

You will learn:

- Blockchain technology and terminology
- Types of Cryptocurrencies / tokens
- **Tools to gather and analyze data**
- **Create trading strategies** based on buy/sell signals
- **Ethereum and Solidity**
- **How to launch your own contracts and Crypto tokens**
- **Build a working Blockchain project**

Get your digital badge with Programwithus.com (Optional):

- 15 True False Questions (10 minutes) Quiz in each session and scored reported. Digital badge of your score total score verifiable through programwithus.com

End goals of the course:

1. Your token / coin floated on Ethereum Blockchain that you can transfer to anyone
2. Your Trading strategy implemented and the profit loss (Paper trading)
3. Your Python blockchain on Azure Notebook

Session 1.1 (Introduction to Blockchain)

Intro to Blockchain
Elements of blockchain
Introduction to Blockchain and terminology
What is Bitcoin and what is Ether (differences)
Types of Cryptocurrencies / tokens
Understanding wallets
Security: Public vs. private key vs. wallets
Cryptography: Terms and Definitions, Hash Functions

Exercises:
Building blockchain Game
Asymmetric crypto Game
Hash Game

Quiz:
15 Questions (True/False)
Passing score 65%

Session 1.2

Python and JavaScript libraries for working with Bitcoin and Ethereum
Build a blockchain in Python
Understand mining on the blockchain and appending the blockchain in Python
Understand Hash mechanism and Importing Hash Library
Implementing blockchain in Flask
Hacking a Blockchain code written in Javascript

Session goals:
Have a blockchain running in Python on your system (Azure Notebooks)

Post class session:
Extra 30 minutes for debugging and installation

Session 2.1 Crypto Investing

Crypto Data Analytics and Investment
Price History of Crypto and Tokens
Types of cryptocurrencies - Top 20 currencies and tokens
Correlations between crypto and traditional asset classes
30 Crypto Investment Lessons

Exercises:

- Levered trading in Bitcoins
- Trading games
- Sentiment trading (Do twitter feed drive crypto prices?)

Session 2.2 (Crypto Analytics on Python)

Introduction to algorithms and blockchain APIs available
Different types of coins such as Forks, altcoins and metacoins
Connecting to exchances using Python
Pulling data into data frames / Tables / Excel
Correlation / pair trading (Live data from last week or month)
Trading based on Twitter data (Sentiment Analysis)
Momentum Strategy / Mean reversal daily strategy

Session Goals:
Have a trading strategy working which you can test during the week. Example: buying a token or crypto based on signals from the last week like moving average / volume / Equity markets / Currency.

Post class session (Bonus):
Extra 30 minutes for debugging and installation

Session 3.1 Ethereum & Solidity

Introduction to Ethereum
Understanding Ethereum Wallets
Understanding Ethereum Gas and OpCodes
Ethereum stack (EVM, Geth, Web3, RPC, Solidity)

Exercises:
Creating your ICO/Token on blockchain using a paper

Session 3.2

Solidity Basics
Setting metamask & Transferring Ethereum
Make contracts for launching your token
Launch your token

Projects (based on skills and needs of the batch):

1. Token ICO contract
2. Betting contract

3. Voting contract
4. FundRaiser Application
5. Lottery

Gentle introduction to DApp
Pet Shop - Missing dogs (Boiler Template for DApp)

Session Goals:
Have your own wallet and token as well as token from other classmates.

Post class session (Bonus):
Extra 30 minutes for debugging and installation

----------End ----------

----------Reference material below----------

Making it possible to take the session that you want - All session are independent and require no pre knowledge. You can also select the sessions out of the eight that you want to take.The first session is for non programmers while the second if for those who wants to see the implementation.

All theory sessions have hands on Games and quizzes.

So the first part of session in non coding, second part is coding. 3 hours session, 1.5 theory and next 1.5 hrs is lab

AT THE END OF THIS COURSE YOU WILL BE ABLE TO

Work with Blockchain technology on a practical level / explain the concept to others
Build real-life tools based upon The Blockchain for your Github portfolio
Have validated code to share with prospective employers showing a working knowledge of blockchain programming

Session 1.1 (Crypto World - Gentle introduction Theory)
Overview of the course:

- Introduce Blockchain and terminology
- What is Bitcoin and what is Ether (differences)
- Types of Cryptocurrencies / tokens

Blockchain and Platforms- Blockchain varieties: public vs private, hybrid
Main chain, side chains, speed and transaction time

Overview of popular blockchains including ethereum and Bitcoin blockchain (more depth provided later)
Permissioned vs. Permissionless: data privacy
Enterprise blockchains overview: Hyperledger-Fabric, r3-Corda, Quorumfrom from JP Morgan
Consensus mechanisms including POW (proof of work), Proof of Stake, Byzantine fault tolerance
Introduction to algorithms and blockchain APIs available
Different types of coins such as Forks, altcoins and metacoins

Storage and transactions - introduction to distributed database
Launch your own blockchain using Hyperledger
Different types of coins such as Forks, altcoins and metacoins

Understanding wallets
Security: Public vs. private key vs. wallets

Cryptography: Terms and Definitions, Hash Functions
Impact of blockchain fork on cryptocurrency value (eg.
Bitcoin V Bitcoin cash)
Open-source tools for app development
Mining and Wallets
Send, storage, pricing of popular digital currencies

- Begin to setup development environment: setup for Windows, Linux and MacOS
- Understanding Private Ethereum Private Network - ether mining on Ganache / Ether Wallet Understanding Ethereum Gas & OpCodes

Session 1.2 (Hands on in Python and Flask)
Overview of the course:

- Intro to Python and Flask
- Intro to Object Oriented programing in Python
- Deploy a block chain on Python
- Implement it on Flask

Session 2.1 (Ethereum Theory)
Understanding more about Ethereum

- Token issuance mechanisms
- ERC20 and ERC223 protocols
- Identity management systems
- Exchange tokens in a token exchange smart contract and in offline protocols
- Finalizing your dApp

Ethereum stack (EVM, Geth, Web3, RPC, Solidity)

Session 2.2 (Intro to Solidity and Ethereum Labs)
Ethereum

- Setting up your Ethereum Environment (Ethereum and Virtual Machine)
- Configuring their own nodeJS, testRPC/parity nodes and truffle projects
- Missing Pet Dog DApp
- Understanding Ethereum Gas and OpCodes
- Introduction to Ethereum Smart Contracts

Session 3.1 (Theory - Solidity Coding / Javascript refresher)

Introduction to Solidity

- Introduction to Smart Contract - Hello World version of a simple Smart Contract
- Full development of a Decentralized Application, DApp - with a web front-end
- Deploy DApp to private networkHistory
- Exploring Smart Contract and Ethereum Protocols
- Full development of a Decentralized Application (dApp with a web front end)

Introduction to development and dAPPs (Decentralized Applications)
Set-up working environment using truffle
Python and JavaScript libraries for working with Bitcoin and
ethereum
Web 3.js -basic concepts and commands
ERC 20 and other structures
File distribution using IPFS
To create a final working dAPP Integrate smart contracts,
IPFS and web3

Theory:
Solidity Programming
Solidity Variables, Functions, & Inheritance
Solidity Functions
Solidity Inheritance
Solidity Modifiers
Proxy Contracts
Solidity Events
Development Frameworks
Web3 JavaScript API

Session 3.2 (Solidity Contract Labs)

Projects:

6. Pet Shop - Missing dogs (Boiler template for DApp)
7. Token ICO contract
8. Betting contract
9. Voting contract
10. FundRaiser Application
11. Lottery

Session 4.1 (Theory)

Crypto Trading and Data Management
How to get Crypto Data
Pulling Cryptocurrency data in Python

- Investment Tools for cryptocurrencies
    - Benchmarks
    - Risk / Return Relationships
    - Different types of Risk and Perception of Risk
    - Risk Measures
    - Risk Premium
    - Diversification and Correlations

30 Crypto Investment Lessons
ShapeShift.io API

Session 4.2 (Labs)

Trading Simulation - Pair trading in Cryptocurrency
Twitter Sentiment Trading in Cryptocurrency
Backtesting Trading Strategies on Python

*The course will provide working sandboxes for all of the coding that is developed.

References for building the course:
Introducing Ethereum and Solidity Foundations of Cryptocurrency and Blockchain Programming for Beginners by Chris Dannen
https://blockchainhub.net/decentralized-applications-dapps/
https://www.bitdegree.org/courses/solidity-smart-contract/
https://www.theblockchainacademy.com/store/rsymaATo
https://github.com/ethereum/wiki/wiki/Ethereum-Development-Tutorial

ADMISSIONS STANDARDS

Basics of Computers
Basics of Programming
1+ years of programming experience (validated by CV or certification)
JavaScript programming is a HUGE PLUS
Python programming is a PLUS

AT THE END OF THIS COURSE YOU WILL BE ABLE TO

Work with Blockchain technology on a practical level
Build real-life tools based upon The Blockchain.

Have validated code to share with prospective employers showing a working knowledge of blockchain programming.

ACCREDITATION

Accreditation is given to participants who pass with 70% score on all course examinations and successful completion of all of the coding assignments.

SCHEDULE

New York Metro: May 21st - Jun 29th 2018

PRICING

Program Pricing: $15,000
Tuition can be paid in Bitcoin or any Cryptocurrency (email for details)

Veterans receive a 20% discount. To qualify for this you must provide written proof of your military service.

COURSE OUTLINE

Pre-Course Work: Included as part of the Boot Camp (a $1,995 value)

4 of the online courses from The Blockchain Academy
Blockchain Foundations
Blockchain Intensive I: Bitcoin and Blockchain
Blockchain Intensive II: The Financial Sector
Blockchain Developers Decision Course

Week 1: JavaScript Refresher (2/3 days)
Ethereum Setting up your Ethereum Environment (Ethereum and VirtualMachine)
Configuring their own nodeJS, testRPC/paritynodes and truffle projects
Understanding Ethereum Gas and OpCodes
Introduction to Ethereum Smart Contacts

Week 2: Introduction to Solidity
Ethereum Exploring Smart Contract and Ethereum Protocols
Full development of a Decentralized Application (dApp with a web front end)

References:
https://blockchainhub.net/decentralized-applications-dapps/

Week 3: ERC20 and ERC223 protocols
Ethereum Token issuance mechanisms

Identity management systems
Exchange tokens in a token exchange smart contract and in offline protocols
Finalizing your dApp

Week 4: Hyper ledger overview
Hyperledger Fabric Overview
Hyperledger Composer
Hyper Ledger Composer data modeling

Week 5: Hyper ledger App Development
Hyperledger DevOps Patterns and Practices
Finalizing your App

Week 6: Blockchain Security
Finalizing Personal Code Portfolio
Interview Preparation Skills Day
Job Fair

All graduates will receive a Certification of Completion.

COURSE OUTLINE

FOMO - Fear of Missing Out
FUD - Fear Uncertainty and Doubt
What are cryptocurrencies?
Where do they come from?
What is an altcoin?
What are some of the most popular cryptocurrencies?
How many cryptocurrencies are there?
Are cryptocurrencies a good store of value?
What are the different type of cryptocurrencies?
Currencies
Tokens
Platforms
Who are the members of the cryptocurrency ecosystems
What is a cryptocurrency address?
Why are cryptocurrencies important?
Global adoption
Emerging financial systems
Efficiencies for:
Criminals
Legitimate transactions
Governments
Corporations
How much are they worth?
How can I use cryptocurrencies?

Raise capital (ICO's)
Payment system
Are they a store of value?
How to be involved in ICO's
The Pro's and Con's of ICO Investing
How to understand an ICO White Paper
How to determine an ICO's value
Are there risks with ICO's?
How can I invest in cryptocurrencies?
What are exchanges?
Coinbase -US
Binance - China
BTCC - China
Coincheck - Japan
Mercado Bitcoin - Brazil
Bitfinex - British Virgin Islands
Bittrex - US
Kraken - US
How can I setup an account?
What's a cryptocurrency wallet, and what type are there?
Exodus
Trust Wallet
Trezor Wallet
What are the risks of investing in cryptocurrencies?
Are we in a crypto Bubble?
What makes a particular cryptocurrency a good investment?
How to select which one that appeals to me?
What tax implementations are there in crypto investments?
Are cryptocurrencies safe?
Theft or loss
Legal status
Security risks
Abandonment of a coin
Pump and Dump Schemes
What happens if I die?
How will my crypto investments be transfered to my heirs?
How to trade cryptocurrencies
Buy and hold
Trend
Limit and Stop Loss (using GDAX)
Technical Analysis (overview)
High Frequency Trading
Trading Bitcoin Futures
Crypto Trading Simulation
Investment Tools for cryptocurrencies
Benchmarks
Risk / Return Relationships
Different types of Risk and Perception of Risk

- Risk Measures
- Risk Premium
- Diversification and Correlations
- Crypto Investing Mindset
- Short Term gain vs. Long Term Investment
- Paper profits vs. Actual profits
- Asset Allocation - Art or Science?
- 30 Crypto Investment Lessons
- Alternative Crypto Investment Opportunities
- Mining investment opportunities
- Nvidia – Chips
- AMD – Chips
- Miners (how to become a miner)
- Physical Miner
- Miner associations
- Mining pools
- ATMs
- BaaS Companies
- IBM
- Amazon
- Oracle
- Microsoft
- Deloitte
- Investment Pools
- Overstock
- Companies changing their name
    - Long Blockchain
    - Future FinTech Group
    - The Crypto Company
    - NodeChain Inc.
    - Blockchain Group Co Ltd
- Incubators / Accelerators
- Existing Incubators / Accelerators
- Creating your own Incubators / Accelerators
- Angel Networks
- Crypto Hedge Fund

Course
https://www.theblockchainacademy.com/store/rsymaATo