

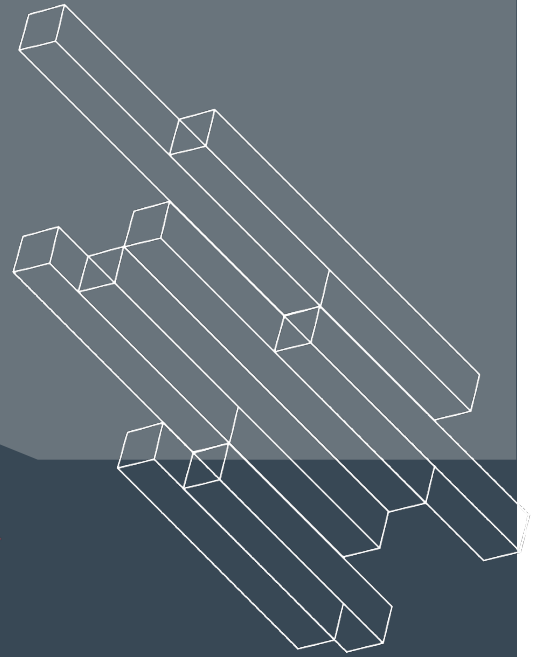
# An Intensive and Practical 3-Day **Ethereum Developer Course**

Course Prospectus  
2019



**BLOCKCHAIN**  
**ACADEMY**

BLOCKCHAIN AND  
CRYPTOCURRENCY  
TRAINING

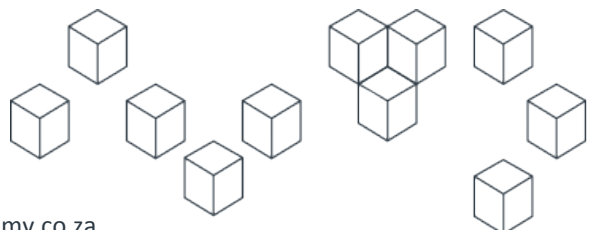


Blockchain Academy

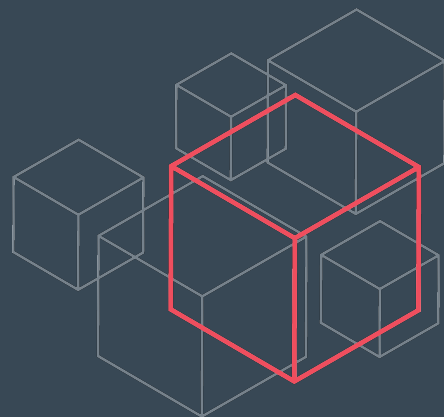
**COURSE PROSPECTUS 2019**

**t:** +27 (21) 409 7000

**e:** [info@blockchainacademy.co.za](mailto:info@blockchainacademy.co.za) | **w:** [www.blockchainacademy.co.za](http://www.blockchainacademy.co.za)



# About the Blockchain Academy



*The Blockchain Academy focuses on capacity building in the digital currencies and blockchain technology industry through specialised training and consulting.*

Cryptocurrencies, Distributed Ledger Technology (DLT) and blockchain technology, represent a number of unique opportunities for improved transparency and efficiencies across multiple industries, including financial services, insurance, identity, healthcare and supply-chain.

We help organisations across sector and industry to fully understand the intricacies and value-proposition of the technology and how it might apply to their respective businesses. Our courses are tailored to meet each organisations specific requirements and

to help build the internal capacity required to make informed decisions. Our consulting team provide continued support to ensure that design, delivery and execution of the strategy and resulting product are held to the highest standard.

Whilst the Blockchain Academy is based in South Africa we have a global client base and our team have a vast amount of international industry experience and are regarded as thought leaders in this space.

## Some of our clients include:



Member of  
**BARCLAYS**



**DISTELL**



**DirectAxis**



**OLDMUTUAL**



**Standard Bank**



always discovering

**Ventures AA**

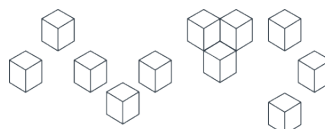


Blockchain Academy

**COURSE PROSPECTUS 2019**

**t:** +27 (21) 409 7000

**e:** [info@blockchainacademy.co.za](mailto:info@blockchainacademy.co.za) | **w:** [www.blockchainacademy.co.za](http://www.blockchainacademy.co.za)



# Why is blockchain technology so important?

*Blockchain technology removes the need for a centralised authority to verify trust. It creates a public ledger of all transactions, which are then traceable, transparent and leave no possibility of alteration, which in turn allows for stronger security, decreased risk and increased efficiencies.*



*Simpler and faster*



*Reduced costs*



*Increased trust*



*Tracking and transparency*

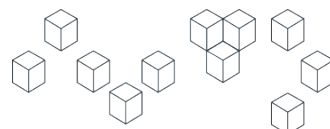
The technology was initially developed to provide an alternative approach to payments by using cryptographic methods to provide a trust-mechanism between two transacting parties without the need for a trusted third party. Now, however, the high number of use cases for the technology is beginning to be realised and understanding this disruptive technology is becoming essential.

*Over the last four years, more than 3000 distributed ledger technology patents have been filed and \$1.4 billion in venture capital investments have been raised, and leading blockchain associations boast 45 of the world's largest financial institutions.*

The world's largest financial institutions have publicly declared their interest in this technology and have begun openly experimenting with it. Large technology and consulting firms such as IBM have entire business units now dedicated to blockchain.

Outside of the commercial use cases, blockchain technology also represents an opportunity to address humanitarian and philanthropic challenges such as identity and financial inclusion, which are all becoming increasingly more important to address.

We believe that blockchain technology represents the second generation of the Internet. It not only holds the potential to profoundly transform a multitude of industries, it has the potential to transform lives.



# What services do we offer?



*We offer bespoke training and consulting services from beginner levels to advanced levels of understanding on blockchain technology and cryptocurrencies as well as blockchain development.*



## Training



## Consulting



## Presentations



## Development

### Training

The academy provides training in various countries. Training in South Africa takes place at AlphaCode Club in Johannesburg and at the Bandwidth Barn in Cape Town, as well as at our clients offices in various cities.

Courses typically over one full day but can be lengthened on request.

### Consulting

The academy provides a variety of consulting services such:

- blockchain development
- feasibility of using blockchain within an organisation
- assisting an organisations developers to build, deploy and test blockchain applications
- advising on the type of blockchain

technology that is best suited to an organisations requirements

- determining the relevant use-cases

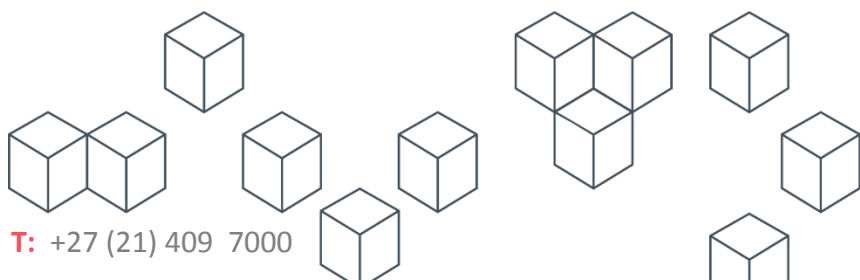
### Presentations

The academy offers presentations to organisations on a variety of topics relating to blockchain and cryptocurrencies.

### Development

The academy and its partners can assist organisations with their blockchain development projects on a variety of different types of blockchain technologies.

*Equip yourself with the knowledge to evaluate the impact blockchain will have on your organisation's business model.*



# Ethereum Developer Course



Demand for blockchain developers is increasing at a rapid rate as enterprises and startups are looking to achieve efficiencies and create new business models enabled by Decentralised Applications (DApps) and smart contracts.

This 3-day course is designed for developers, architects and IT Managers wanting to learn and apply blockchain technology to solve real-world business problems and effectively develop secure, full stack DApps on the Ethereum blockchain.

It explores blockchain concepts, languages, tools, and frameworks used for the development of these apps and smart contracts.

## WHO SHOULD ATTEND?

- Programmers
- Application Developers
- System Architects
- Network Architects
- Network Security Architects
- IT Professionals with programming experience

## COURSE OUTCOME:

The outcome of this course is to provide attendees with the necessary tools and information to build smart contracts and decentralised applications (DApps) using the Solidity programming language.

We will use Truffle, a popular DApp development framework to build and deploy the applications.

Attendees will have an overview of blockchain concepts and workings of the Ethereum blockchain as well as the languages and frameworks required to build decentralised applications.

Attendees will learn how to start an Ethereum node and interact with it as well as learn to compile, test and deploy a contract to the Ethereum blockchain.

Attendees will finish the course by building a web frontend using HTML/Javascript that interacts with a smart contract. Attendees will be able to write their own Ethereum applications at the end of the course.

This course aims to take you from zero knowledge on developing decentralised apps, to becoming an active early adopter who can develop an Ethereum based blockchain app.



## REQUIREMENTS

A basic knowledge of the following:

- Object-oriented programming
- JavaScript
- Node.js
- Html
- CSS
- NPM package manager
- Git repositories
- Bash Shell (Linux/MacOS)
- React



## DURATION

16- 18 July 2019

**09:00-16:00pm**

with short tea/coffee breaks and light lunch.



## VENUE

AlphaCode Club, Sandton, Johannesburg.



## TRAINING METHODOLOGY

Our training is instructor led in classroom style. Attendees will be doing the practical sessions with the instructor.



## PRICE

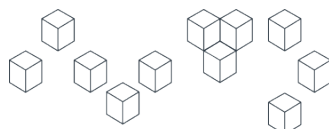
**R10,500.00** per person

Blockchain Academy

**COURSE PROSPECTUS 2019**

**t:** +27 (21) 409 7000

**e:** [info@blockchainacademy.co.za](mailto:info@blockchainacademy.co.za) | **w:** [www.blockchainacademy.co.za](http://www.blockchainacademy.co.za)





## Module 1

### What is Ethereum?

- A brief history of Ethereum
- The difference between Bitcoin and Ethereum
- Ethereum design and philosophy
- Ether: what is it and why is it needed

## Module 2

### The Ethereum Virtual Machine (EVM)

- Smart contracts
- Gas: paying for computations
- A simple smart contract in action
- Running contracts on the Ethereum Virtual Machine

## Module 3

### Ethereum Applications

- Tokens/ICO's
- Decentralised applications
- Decentralised Autonomous Organisations (DAO's)

## Module 4

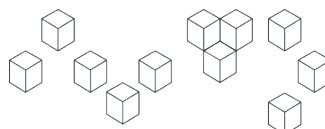
### Securing the Ethereum Blockchain

- Mining/Nodes
- Proof of Work vs. Proof of Stake
- Other methods of securing blockchains

## Module 5

### Ethereum Past, Present and Future

- How is Ethereum different from when it launched?
- Ethereum Enterprise Alliance (EEA)
- An introduction to a few popular and innovative smart contracts
- Scaling issues and the plan to scale Ethereum
- Competition: other smart contracts platforms
- Plans for the future





## Module 6

### Introduction to Ethereum Development

- What is a smart contract?
- What can you do with smart contracts?
- What can you not do with smart contracts?
  - Hard limitations
  - Practical limitations
- Smart contracts vs. Distributed Applications
- Interacting with smart contracts

A practical session will follow where attendees will run their own smart contracts. This will include:

- Using Dapps
  - Metamask
  - A practical session: Attendees install Metamask extension and run a Dapp

## Module 7

### Tools and Frameworks

- Metamask
- Remix online IDE
- Truffle
- Ganache
- OpenZepellin
- Web3.js
- Solidity IDE's

## Module 8

### Setting up the Development Environment

This is a practical session where attendees will set up their own basic development environment.

## Module 9

### Introduction to Solidity Development

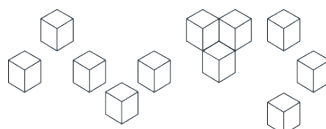
- Introducing Solidity
- Data types and structures
- The structure of a smart contract
- Contract lifecycle
- Example: A basic smart contract
- Testing with Remix
- Deploying the contract
- Monitor the deployment with Etherscan
- Call the contract
- Kill/Un-deploy a contract

A practical session will follow where attendees will create, test deploy, call and kill a smart contract.

## Module 10

### Advanced Smart Contracts

- Using the Truffle framework
- Securing contracts
  - Common exploits
  - Common contract security patterns
  - Zeppelin SafeMath Library
- Advanced Data Structures
  - Arrays
  - Maps and Structs
- Deploying your own testnet with Ganache
- Testing with Mocha





## Module 11

### Building Ethereum Distributed Application Apps

- Using the Truffle framework
- Introducing Web3.js
- Rendering contract data
- Using a form to get user input
- Using static assets
- Interfacing with distributed file system
  - IPFS
  - Swarm
- Decentralised P2P communication
  - Whisper/Orbit
  - Sending/receiving messages
- Oracles
  - Types of Oracles
  - Some useful existing Oracles
  - Interfacing with Oracles

## Module 12

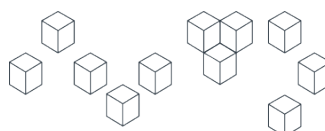
### Advanced and Multi Page Front-ends

- Layouts, buttons and CSS
- Routing
- Validation and error handling
- Spinners

## Module 13

### Enterprise Scale Dapps Infrastructure and Architecture

- Architecting Ethereum projects
- Solium – standardising style and security practices
- Dapps DevOps
- Unit testing
- Regression testing
- Automating the development pipeline
- Monitoring a live DApp







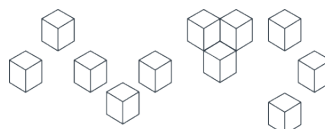
## Willem van Riet

Ethereum Senior Developer and Systems Architect



With over 20 years in Software Development and Architecture, Willem has always had a keen interest in the future of technology. This led him to the blockchain and the belief that distributed software will form a key part of the future of software.

Closely following the development of Ethereum and other smart contract platforms since 2016 from the point of view of a software engineer has given him an in depth understanding of how these platforms work under the hood. Willem is the instructor of Ethereum introduction and development courses.



# Payment

---

Please make payment one week before course commences to:

Blockchain Academy Pty Ltd

Bank: Standard Bank

Account No: 072612193

Branch: Claremont

Branch Code: 051001

Please send proof of payment to:

[info@blockchainacademy.co.za](mailto:info@blockchainacademy.co.za)

Students receive 35% discount on all our courses.

## Group Bookings

---

We offer private training sessions for groups of 8 or more individuals, onsite at your offices or at our training facilities in Johannesburg and Cape Town.



---

**BLOCKCHAIN**  
**ACADEMY**

---

**BLOCKCHAIN AND  
CRYPTOCURRENCY  
TRAINING**



# Contact Us

---

The Bandwidth Barn, Block B, 3rd Floor,  
Woodstock Exchange,  
66-68 Albert Road,  
Woodstock,  
Cape Town, 7925



+27 (21) 409 7000



info@blockchainacademy.co.za

www.blockchainacademy.co.za



BlockchainAcademySA



@BlockchainAcad



@blockchain-academy-pty-ltd



Blockchain Academy



## BLOCKCHAIN ACADEMY

BLOCKCHAIN AND  
CRYPTOCURRENCY  
TRAINING

