

# **Introduction to Blockchain and Blockchain Development Workshop**

## **Workshop Overview:**

This two-day workshop will introduce the participants to concepts needed for understanding Blockchain technologies and successfully designing, building and implementing Blockchain Prototypes and Blockchain Solutions. The workshop will provide the technological and managerial knowledge base for Blockchain solution approaches such as the Ethereum Blockchain and Decentralized Applications (DApps), which are decentralized distributed Web 3 applications written in Solidity. Topics such as distributed ledger, cryptography, peer-to-peer decentralized computing, public and private permissioned and permissionless blockchains will also be discussed and demonstrated in detail. This workshop will include a hands-on laboratory component.

## **Session Objectives:**

### **Students/attendees will gain an understanding of:**

- History of Money and Conventional Ledger Functions
- Bitcoin Basics
- Tokenized Economy and Crypto Currency Concepts
- Blockchain Technology
- Ethereum Blockchain Technology
- Blockchain Beyond Bitcoin
- Blockchain Law
- Blockchain Data Structures and Databases
- Blockchain Limits and Challenges
- Fundamental principles of Blockchain Security
- Real-world Blockchain Applications
- Ethereum EVM, Smart Contracts, and Solidity
- How to Design and Implement a Blockchain Solution Project – an Organized High-Level Step-by-Step Approach
- Implementing a Simple Blockchain DApp Solution

## **Session Outcomes:**

Each successful participant should be able to demonstrate foundation knowledge and application of the following skills:

- Understand the fundamental principles of the History of Money and Conventional Ledger Functions
- Understand the fundamental principles of Bitcoin Basics
- Be able to effectively understand and communicate the fundamental principles of Tokenized Economy and Crypto Currency Concepts
- Be able to effectively understand and communicate the fundamental principles of Blockchain Technology
- Be able to effectively understand and communicate the fundamental principles of Ethereum Blockchain Technology
- Understand the fundamental principles of Blockchain Beyond Bitcoin
- Understand the fundamental principles of Blockchain Law
- Be able to effectively understand and communicate the types of Blockchain Data Structures and Databases
- Be able to effectively understand and communicate the Blockchain Limits and Challenges
- Be able to effectively understand and communicate the fundamental principles of Blockchain Security
- Be able to effectively understand and communicate Examples of Real-world Blockchain Applications
- Be able to effectively understand and communicate fundamental principles of the Ethereum EVM, Smart Contracts, and Solidity
- Be able to effectively understand and communicate fundamental principles of How to Design and Implement a Blockchain Solution Project – an Organized High-Level Step-by-Step Approach
- Be able to effectively understand, communicate, and demonstrate the fundamental principles of Implementing a Simple Blockchain DApp Solution

## **Key Topics:**

Topic 1: History of Money and Conventional Ledger Functions

Topic 2: Bitcoin Basics

Topic 3: Tokenized Economy and Crypto Currency Concepts

Topic 4: Blockchain Technology

Topic 5: Ethereum Blockchain Technology

Topic 6: Blockchain Beyond Bitcoin

Topic 7: Blockchain Law

Topic 8: Blockchain Data Structures and Databases

Topic 9: Blockchain Limits and Challenges

Topic 10: Blockchain Security

Topic 11: Examples of Real-world Blockchain Applications

Topic 12: The Ethereum EVM, Smart Contracts, and Solidity

Topic 13: How to Design and Implement a Blockchain Solution Project – an Organized High-Level Step-by-Step Approach

Topic 14: Implementing a Simple Blockchain DApp Solution

## Workshop Schedule:

### Day 1

Time	Module
8:30 AM - 8:45 AM	History of Money and Conventional Ledger Functions
8:45 AM – 9:15 AM	Bitcoin Basics
9:15 AM – 10:30 AM	Tokenized Economy and Crypto Currency Concepts
10:30 AM – 10:45 AM	Break
10:45 AM – 11:45 AM	Blockchain Technology
11:45 AM – 12:30 PM	Lunch
12:30 PM – 1:30 PM	Ethereum Blockchain Technology
1:30 PM – 2:00 PM	Blockchain Beyond Bitcoin
2:00 PM – 2:15 PM	Break
2:15 PM – 2:50 PM	Blockchain Law
2:50 PM – 3:30 PM	Blockchain Data Structures and Databases

### Day 2

Time	Module
8:30 AM – 8:45 AM	Blockchain Limits and Challenges
8:45 AM – 9:15 AM	Blockchain Security
9:15 AM – 10:30 AM	Examples of Real-world Blockchain Applications
10:30 AM – 10:45 AM	Break
10:45 AM – 11:45 AM	The Ethereum EVM, Smart Contracts, and Solidity
11:45 AM – 12:30 PM	Lunch
12:30 PM – 2:00 PM	How to Design and Implement a Blockchain Solution Project – an Organized High-Level Step-by-Step Approach
2:00 PM – 2:15 PM	Break
2:15 PM – 3:30 PM	Implementing a Simple Blockchain DApp Solution

**Course Notes:** Copies of the course lecture notes in the form of the PowerPoint presentations for each day accompanying each lecture will be provided for each student. Supplemental Online resources and code examples will also be provided. You should be aware that both note taking is encouraged and interactive discussion and questions are encouraged and these should help your understanding of the material.

## Facilitator



William Slater is an experienced, seasoned Information Technology professional with more than three decades of experience. Though he has worked in all areas of IT, his primary focus since 2001 has been Data Centers, Cybersecurity, Networking, Application Development, Service Management, Blockchain and Cryptocurrency. He has studied and worked with Blockchain since 2012. In 2018, he prepared presentations and presented at four different local technical conferences, and he has been teaching Blockchain Technology to more than 30 Interns at his company since June 1, 2018. In Spring 2019, he will teach the first ever class on Blockchain and Blockchain Development for the School of Applied Technology at Illinois Institute of Technology. Mr. Slater has been an Adjunct Industry Professor for over 10 years, and holds three master's degrees, and 80 professional certifications. His professional experience includes professional at each of these organizations: United States Air Force, Texas Eastern Transmission Corporation, Northrop Defense Systems Division, Marshall Field's, Digital Equipment Corporation, Systematics Alltel, Corporate Computing International, British Petroleum North America, SAIC, Getronics, U.S. Department of Veterans Affairs, Microsoft, Technisource, Chicago State University, Blue Cross Blue Shield of Illinois, CACI, Technatomy, IBM, JLL, Abacus Technical Services, McDonald's, and his own company, Slater Technologies, Inc.

**Date: January 17 - 18, 2019** (8:30AM-3:30PM)  
Continental breakfast and lunch will be provided

**Location:**  
Illinois Institute of Technology  
201 East Loop Rd  
Wheaton, IL 60189

**Workshop Fee: \$795 per person**  
*This workshop awards 1.1 CEU or 11 PDU*

**REGISTER HERE:** <http://www.cvent.com/d/7bq96b>

Questions? Please contact Mary LaFleur at [mlafleur@iit.edu](mailto:mlafleur@iit.edu) or (630) 682-6030