

BLOCKCHAIN ARCHITECTURE DESIGN AND USE CASES



**COMPUTER SCIENCE
& ENGINEERING**

Technical Partner



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TYPE OF COURSE : Rerun | Elective | UG/PG
INTENDED AUDIENCE : CSE, ECE, EE, Maths
COURSE DURATION : 12 weeks (28 Jan'19 - 19 Apr'19)
EXAM DATE : 28 Apr 2019

Dr. PRAVEEN JAYACHANDRAN
Research Staff Member
IBM



INDUSTRIES APPLICABLE TO : IT Industries

COURSE OUTLINE :

The widespread popularity of digital cryptocurrencies has led the foundation of Blockchain, which is fundamentally a public digital ledger to share information in a trustworthy and secure way. The concept and applications of Blockchain have now spread from cryptocurrencies to various other domains, including business process management, smart contracts, IoT and so on. This course is a joint venture from academia and industry, where the target is to cover both the conceptual as well as application aspects of Blockchain. This includes the fundamental design and architectural primitives of Blockchain, the system and the security aspects, along with various use cases from different application domains.

ABOUT INSTRUCTOR :

Prof. Sandip Chakraborty received his Ph.D. and M.Tech. degrees from Department of Computer Science and Engineering, Indian Institute of Technology (IIT), Guwahati, India. Presently, he is an Assistant Professor with Department of Computer Science and Engineering, IIT Kharagpur.

Dr. Praveen Jayachandran is a research staff member, master inventor and manager of the Blockchain and Smart Contracts team at IBM Research, India. His work spans different aspects of blockchain technology, including developing an enterprise-grade blockchain platform, development of smart contracts, and reimagining industry use cases in a blockchain world.

COURSE PLAN :

Week 01 : Introduction to Blockchain
Week 02 : Crypto Primitives and Bitcoin
Week 03 : Consensus
Week 04 : Permissioned Blockchain
Week 05 : Hyperledger Fabric
Week 06 : Fabric Demo
Week 07 : Blockchain Use Cases - Finance
Week 08 : Blockchain Use Cases - Industry
Week 09 : Blockchain in Government and Blockchain Security
Week 10 : Security and Research Aspects
Week 11 : Research Aspects in Blockchain
Week 12 : AI, Blockchain and Big Data