eSatya
a rumsan company

BLOCKCHAIN FELLOWSHIP
2022

Supported by: RUMSAN GROUP OF COMPANIES

BLOCKCHAIN FOUNDATION NEPAL

eSatya

eSatya is a blockchain company by Rumsan Associates in Nepal that specializes in development, consulting, and awareness of blockchain technology. We believe blockchain technology can provide new infrastructure to build the next innovative applications beyond cryptocurrencies, driving profound, positive changes across businesses, communities, and society.

What we do?
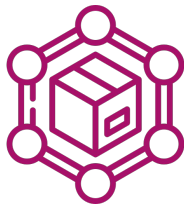
Product Development   **Training and Awareness**   **Strategy and Consulting**

YOUR FIRST STEP TO A

CAREER IN BLOCKCHAIN

BLOCKCHAIN FELLOWSHIP 2022

Blockchain Fellowship 2022 designed by eSatya and Blockchain Foundation Nepal will help participants get started with key elements of blockchain from industry experts. In this three month long program, the participants will design applications on decentralized networks (DApps) that combine smart contracts and frontend user interfaces using a number of development tools and frameworks. The students will get an opportunity to work and design and develop their own blockchain project.

The course covers key topics in the blockchain industry to help you become a blockchain developer – from basics of blockchain to designing smart contracts and understanding good blockchain programming practices. Participants will learn how to leverage the blockchain technology in their applications using solidity and design an enterprise level permissioned blockchain network using hyperledger besu. The fellowship will instruct participants on designing, creating and implementing technical solutions for organizations with a Blockchain Technology.

COURSE OBJECTIVES

Learners will apply the concepts covered in the courses to deploy an instance of a blockchain to carry out peer-to-peer transactions, program/test smart contracts, analyze, design, & code a blockchain-based solution for decentralized applications. After completing this course, participants will be able to :

- Understand the fundamental concepts of blockchain technology;

- Design, create and implement smart contracts and DApps;

- Design a permissioned blockchain network to match business solutions;

- Understand and have a working knowledge of the emerging blockchain technology;

- Create and deploy a blockchain based project.

PRE-REQUISITES

To maximize the outcome of the course, the participants are expected to the following course prerequisites

- Knowledge of at least one modern, high-level programming language is required. (You might be asked to share your Gitlab repository during the sign up process)

- Web development basics

- Object-Oriented Programming basics

WHO CAN ATTEND?

The course is especially designed for professionals who are looking into designing projects using blockchain technology.   We encourage you to join the program, if you are –

- Programmers and developers who are enthusiastic to learn and work on Blockchain;

- Professionals who are looking to explore a career in Blockchain;

- IT students who are interested to start their career in Blockchain technology and looking for internships.

- We highly encourage female participants to apply to this program .

WHAT YOU GET?

After successfully completing the fellowship, the participants will receive

- **Digital certification** from Blockchain Foundation Nepal and eSatya that can be verified in blockchain networks. The digital certificate can be shared and showcased in LinkedIn profile.
- **Lifetime access** to the course content - presentation decks, recording videos, digital resources etc.
- Extended **consultation** for four months after fellowship completion to enhance and implement the learnings into the real world.
- Hands-on **industry project experience** on how to implement blockchain technology across various industries - health care, supply chain, agriculture, development and finance.
- **Internship** opportunities from our partners to grow the career blockchain technologies.
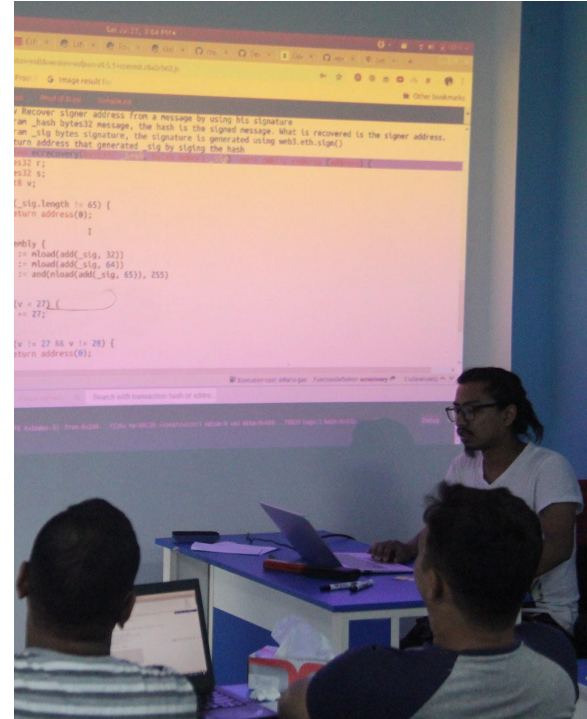
COURSE DURATION

- The course will take approx. 32 hours for completion.

COURSE DELIVERY

- The course will be conducted through online platforms such as Zoom and Google Classroom.

INSTRUCTORS

Manjik Shrestha

Mr. Shrestha is an experienced Blockchain Developer. Experienced in developing decentralized applications on Ethereum and designing Enterprise permissioned blockchain in Ethereum. He is an alumni of ConsenSys Developers Bootcamp 2019 and currently assigned as a ConsenSys Ambassador for Nepal.

Binod Chaudhary

Binod Chaudhary is a Software Engineer actively working in the software development industry for more than 5 years. Has developed blockchain wallet which has been implemented to real world blockchain projects. Has also used blockchain based tools & libraries like Web3, Ethers JS, Metamask, ABIs. Besides programming,Loves to teach and share his knowledge.
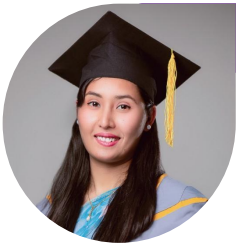
Ashmita Manandhar Shrestha

Ms. Manandhar has extensive experience in conducting blockchain sessions, blockchain meetups, and blockchain series. Currently promoting and researching blockchain technology in Nepal through eSatya. Has successfully completed a course on Blockchain: Foundations and Use Cases through Consensys Academy.

Dr. Rajat Rajbhandari

Dr. Rajbhandari is a Co-Founder of dexFreight, a startup platform for shippers & carriers to collaborate on blockchain & smart contracts. He is the author of "A Book About Blockchain: How Companies Can Adopt Public Blockchain to Leap Into the Future".

Santosh Shrestha

Over seven years of experience in strategizing to run AML/KYC Program efficiently in two major banks. Has spoken at numerous blockchain meetups – Crypto Tokens, Blockchain & Covid, Digital Banking, Blockchain Symposium & many more. Iis the Co-Founder of Blockchain based company, eSatya.

Ruchin Singh

Singh has extensive experience in starting new ventures in the Nepali ecosystem. He regularly conducts workshops on business model canvas Nepali Entrepreneurs. Is currently researching and promoting blockchain technology in Nepal through eSatya.

SESSION DETAILS

Topic	Description
Introduction To Blockchain In this session, the participants will be introduced to the basics of blockchain and its use cases.	• Blockchain 101 • What is Blockchain and DLT? • Blockchain Vs Cryptocurrency. • Types of Blockchain - Public vs Private Blockchain. • Consensus: How Conflicts are Resolved. • Benefits of using Blockchain Technology. • DeFi • Guest Speaker: CryptoTokens/Tokenized Economy
Blockchain Ecosystem You get to learn about the underpinnings of blockchain technology. You will be introduced to several technology and theories which sums up to build a blockchain platform	• Blockchain Architecture -Distributed, decentralized, and P2P Network? • Cryptography and Cryptographic Algorithms. • Getting Familiar with Cryptographic hash functions • Blockchain Data Structure • Transaction Execution and Distribution. • Merkle Tree and Hashing. • Understanding consensus algorithms- POW,POS,DPOS and POA • Review Of Blockchain Platforms- Bitcoin and Ethereum • Blockchain Forks.
Wallet General idea of blockchain Wallets and its working mechanism. You will build your own web-based wallet	• What does a wallet do? • Ethereum Address - (EOA and contract address) • Generating Ethereum Addresses • One Wallet for All • Mnemonic code for Wallets - (BIP-39) • Digital Signature (ECDSA) • Create your own Web-based Wallet.
Ethereum and Smart Contract You will be introduced to Ethereum Platform and its underlying technology. You will explore Solidity, a programming language to write smart contract and go through many types of smart contract code, introduce you to key development tools	• Ethereum Basics • Ethereum Transactions and Gas Fees • Smart Contract Basics. • Working Mechanism Of Smart Contracts • Solidity Fundamentals • Hands-on with Solidity(proof of existence exercise) • Smart Contract Examples and Exercises • Smart Contract Pitfalls and Debugging • Ethereum based Tokens- ERC20 and ERC721. • Design smart contract with open-zeppelin • Develop using Truffle Environment • Implementing Truffle Boxes • Getting familiar with Ethereum client - geth, parity, quorum, Hyperledger Besu • Crypto Token – Executing Minimal Viable Token.
Ethereum Dapps You will be introduced to Daaps and end-user interaction with daaps. You will learn how to build one and interact through our web application.	• Introduction to Dapps • Setting up Metamask • Ethereum and End-User • Ethereum gateways - Infura • Interaction with web3.js and ethers.js • Building simple Dapps on Ethereum

Enterprise Ethereum You get to build your own Private Ethereum Network and set up the permission rules according to your requirement and carry out the private transaction within your network.

- Intro to Enterprise Blockchain
- Permissioned Blockchain platforms: Fabric, Besu
- Launching the Besu Network
- Fundamentals of Besu Network
- Starting a Besu network through scripts
- POA consensus Algorithms – Clique and IBFT 2.0
- Permissioning in besu.
- Create a private network through shell scripts.

Advanced Topic

- Blockchain Oracles
- Implementing Blockchain Oracle on Ethereum
- Off Chain Storage
- IPFS
- Blockchain Scalability Trilemma
- Ethereum Layer 2 scaling solutions
- State Channels / Side Chains
- Blockchain InterOperability

Use Cases and Blockchain Solutions You will get to learn about how various projects are implementing blockchain technology.

- Rahat
- TruckIn
- Chino
- Agriclear
- IMS Stock Inventory

Project. The participants will design and implement a blockchain project to successfully complete the course.

- Implementing Blockchain

TESTIMONIALS

Ranju G.C.

I often tried to learn blockchain on my own but all the trials used to go in vain. Well, in this fellowship, the mentors were exceptionally supportive during the whole program. Also, I could have a one to one session with the mentors and organizers that helped me to solve my queries in the best way.

Anupama Koirala

Being a part of the Blockchain Fellowship has been a great experience. I was able to learn a lot of new concepts and ideas. Thank you to eSatya, Rumsan Group of Companies for giving us this platform

Kalyan Ghimire

I thank Esatya for this opperttuinity in sharpening my skills and understanding for Blockchain. I loved the instructors and their proficiency in the topics and absolutely recommend this Fellowship to anyone who has a curiosity in this subject.

Abhishek Basyal

The blockchain fellowship experience was awesome, highly recommend it to all. Great content, mentoring, and support.

CONTACT US

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