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# Capacity Building Programme Blockchain Technology and Applications

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Online Mode



**Empowering Girls to Reduce the Gender Gap in IT and  
ITES Sectors in South Asia Region: Training and  
E-Content Development Programme**

## About Asi@Connect

Asi@Connect provides dedicated high-capacity internet connectivity for research and education communities across Asia-Pacific; operating at speeds of up to 10 Gbps, it currently interconnects universities and research centres in 21 countries/economies across the region. It also connects 50 million European researchers and academics served by the GÉANT network and supports collaborative programmes in areas such as earth observation, disaster warning, climate research, food security, delivery of e-health and e-learning.

## About the Project

Reducing the gender gap in higher and technical education in the South Asia region is the need of the hour for the overall growth of the third world. Serious efforts are needed for greater involvement of girls in emerging technologies and future professions for the growth of the region. This project aims to bridge the gender gap in the South Asia region and create an ecosystem of collaborative learning and education by connecting people with cultural diversities and traditions. Under the project, skill development programmes for girl students and capacity building programmes for college and university teachers are being conducted. E-content development is also planned under the project in emerging areas of IT.

## Project Team

- Prof. Aparajita Ojha, Prof. Pritee Khanna, Dr. Kusum K. Bharti, and Dr. Neelam Dayal, PDPM IIITDM Jabalpur, India
- Dr. Gaurav Trivedi, IIT Guwahati, India
- Prof. Mohammed Eunus Ali, BUET, Bangladesh
- Dr. Tulsi Gurung, Royal University of Bhutan
- Dr. Surendra Gautam, Tribhuvan University, Nepal
- Dr. Gajendra Sharma, Kathmandu University, Nepal

## About the Course

This capacity-building program aims at providing rigorous training on blockchain technology and emerging applications. The target participants are college and university teachers, and researchers from India, Nepal, Bangladesh and Bhutan. The course will cover the foundations of blockchain technology and its applications in different domains.

## Course Contents

- Introduction: Blockchain and distributed ledger technology, Bitcoin blockchain. Transactions, Digital signature, and consensus mechanism- Proof of Work.
- Ethereum blockchain, Smart contracts, Blockchain as a platform
- Building a smart contract and its deployment on the blockchain network - Using Solidity language, Metamask and Remix Programming Environment.
- Blockchain use cases and Decentralized applications (DApps)
- Using Truffle, and Ganache for the deployment of smart contract on a test network.
- Alternatives to Proof of Work, Proof of stake, and other consensus, Byzantine fault tolerance.
- Public and private ledgers, Permissionless and permissioned blockchain, Enterprise level blockchains and distributed ledgers.
- Blockchain security: Public-Key Cryptography, Hashing, Hashchain to Blockchain, Transaction Integrity, Securing Blockchain.
- Hyperledger fabric (HF) network., Chaincode, consensus in HF, Emerging applications of blockchain in Healthcare /Security & Internet of Things.
- Private Data and Secure Asset Transfer in an HF network.
- Cryptocurrencies, NFTs, DeFi, Policy issues related with blockchain.
- Blockchain scalability issues and emerging solutions.

## COURSE COORDINATORS

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## Resource Persons

- Prof. Aparajita Ojha, IIITDM Jabalpur, India
- Dr. Mani Madhukar, IBM, Noida, India
- Dr. S. Venkatesan, IIIT Allahabad, India
- Dr. Ashok Kumar Das, IIIT Hyderabad, India
- Dr. Amrendra Singh Yadav, ABV IIITM Gwalior, India
- Dr. Suyel Namasudra, NIT Agartala, India
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- Mr. Samir Jain, IIITDM, Jabalpur, India

## For details visit our website

<https://www.iiitdmj.ac.in/asia-connect.iiitdmj.ac.in/CBP4.html>

## Registration Link (Limited Seats)

No Registration Fee. Course is open for faculty and research scholars.

Preference will be given to female applicants.

[https://docs.google.com/forms/d/e/1FAIpQLSfPxlh1e1nLQevME4i0VnEnCSRSdGOM1s4WX0fyJgxHp6o5t4g/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSfPxlh1e1nLQevME4i0VnEnCSRSdGOM1s4WX0fyJgxHp6o5t4g/viewform?usp=sf_link)



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