BCSE329P	**BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGY LAB**	**L**	**T**	**P**	**C**
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Pre-requisite	**NIL**	**Syllabus version**
		1.0

Course Objectives

1. To understand Blockchain and Distributed Ledger Technologies.
2. To learn the development in Blockchain functionalities.
3. To identify alternative techniques to proof of work for Blockchain protocols, proof of stake/space.

Course Outcomes

After completion of this course, the student shall be able to:

1. Implement a blockchain for real time scenario.
2. Evaluate alternative blockchain and their applicability.

Indicative Experiments

1.	Deploy a local private blockchain over a network with Ethereum or Rust.
2.	Implement the **mining** module of Bitcoin client using Rust. The mining module, or miner, should produce blocks that solve proof-of-work puzzle.
3.	Compile and test smart contracts on a testing framework using the Ethereum Virtual Machine (EVM).
4.	Deploy a chaincode using Hyperledger Fabric on a custom network.
5.	Create a Hyperledger Fabric Blockchain service on Cloud.
6.	Deploying a ERC20 token on the Ethereum Testnet.
7.	Launch your own token on alternative blockchain such as BigchainDB

Total Laboratory Hours	**30 hours**

Text Book

1	Goldfeder, S., Bonneau, J., Miller, A., Felten, E., Narayanan, A. Bitcoin and Cryptocurrency Technologies, 2016, 1st edition, Princeton University Press, New Jersey.

Reference Books

1	Iyer, Kedar, et al. Blockchain: A Practical Guide to Developing Business, Law, and Technology Solutions., 2018, 1st edition, McGraw-Hill Education, United Kingdom.

Mode of Evaluation: CAT / written assignment / Quiz / FAT			
Recommended by Board of Studies	04-03-2022		
Approved by Academic Council	No. 65	Date	17-03-2022