**Lesson Plan**

**Name of Faculty : Er Chandna Jain, Guest Faculty of CSE**

**Discipline : Computer Science and Engineering**

**Semester : 5th (odd)**

**Subject : Block chain Technology (PE/CDS/78-T)**

**Lesson Plan Duration : August to December-2025**

**Work Load (Lecture/Practical) per week (in hours): 03**

| Week | Theory | Topic Covered Date and Remarks |
| --- | --- | --- |
| Lecture Day | Topic (Including Assignment/Test) | Date | HOD | Director-Principal |
| 1st | 1 | Introduction to Cryptography |  |  |  |
| 2 | Introduction to graph, ring and field |  |  |  |
| 3 | prime and relative prime numbers |  |  |  |
| 2nd | 4 | modular arithmetic, Fermat’s and Euler’s theorem |  |  |  |
| 5 | Euclid’s Algorithm, RSA algorithm |  |  |  |
| 6 | Diffie-Hellman key exchange algorithm |  |  |  |
| 3rd | 7 | ElGamal Encryption |  |  |  |
| 8 | Elliptic curve cryptography, SHA 256 |  |  |  |
| 9 | Digital Signature, Zero Knowledge Proof (ZKP) |  |  |  |
| 4th | 10 | Introduction from barter system to Cryptocurrency |  |  |  |
| 11 | fundamental of Blockchain, Block structure |  |  |  |
| 12 | Genesis Block, Orphaned Blocks |  |  |  |
| 5th | 13 | Stale Block, Uncle Block |  |  |  |
| 14 | Distributed Ledger Technology (DLT) |  |  |  |
| 15 | Peer-to- peer network, Merkle Tree |  |  |  |
| 6th | 16 | Lifecycle of Blockchain, Evolutions of Blockchain |  |  |  |
| 17 | Fork, Transactions and UTXO's, double spending money |  |  |  |
| 18 | Types of Blockchain. Need of Blockchain |  |  |  |
| 7th | 19 | Benefits of Blockchain |  |  |  |
| 20 | Cryptocurrencies: Bit Coin (BTC) |  |  |  |
| 21 | Ethereum (ETH) |  |  |  |
| 8th | 22 | Ripple (XRP) |  |  |  |
| 23 | Lite Coin (LTC) |  |  |  |
| 24 | Bitcoin Cash (BCH), Nonce |  |  |  |
| 9th | 25 | Mining pools, Mining, Difficulty Level, Current Target |  |  |  |
| 26 | how miners picks transactions, How do mem pools work |  |  |  |
| 27 | 51% attack Consensus Algorithms: Proof of Work (PoW) |  |  |  |
| 10th | 28 | Asynchronous Byzantine Agreement |  |  |  |
| 29 | Proof of Stake (PoS) |  |  |  |
| 30 | Hybrid models ( PoW + PoS), Wallets |  |  |  |
| 11th | 31 | Types of wallets-Hardware, Software, Paper, Web, Desktop |  |  |  |
| 32 | Ethereum - Ethereum network |  |  |  |
| 33 | Ethereum Virtual Machine (EVM) |  |  |  |
| 12th | 34 | Wallets for Ethereum |  |  |  |
| 35 | Solidity - Smart Contracts, Web3, Truffle |  |  |  |
| 36 | some attacks on smart contracts |  |  |  |
| 13th | 37 | Design and issue Cryptocurrency ICO, Mining |  |  |  |
| 38 | Gas - Transactional Fee & Incentivization |  |  |  |
| 39 | D Apps, Decentralized Autonomous Organizations (DAO) |  |  |  |