

**Dr.SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE
(Autonomous)**

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Coimbatore- 49**

**DEPARTMENT OF COMMERCE WITH INFORMATION
TECHNOLOGY**

**21UCI505 – BLOCKCHAIN AND DISTRIBUTIVE
LEDGER**

Unit-5: Ethereum – An Introduction

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- ❖ a decentralized, open-source blockchain platform
- ❖ enables developers to build and run smart contracts and decentralized applications (DApps) without relying on a central authority.
- ❖ proposed by Vitalik Buterin in 2013
- ❖ mainly focused on digital currency transactions
- ❖ provides a programmable blockchain where developers can create automated digital agreements and applications.

Ethereum- Definition

Ethereum is a blockchain-based distributed computing platform that allows developers to create and execute **smart contracts and decentralized applications (DApps)** using its native cryptocurrency called **Ether (ETH)**.

1. Smart Contract Execution

Ethereum enables the creation and execution of **Smart Contracts**, which are self-executing programs that automatically enforce agreements when predefined conditions are met.

Example:

If a payment of **₹10,000** is received, the system automatically transfers ownership of a digital asset.

2. Development of Decentralized Applications (DApps)

Developers can build **Decentralized Applications** that run on the Ethereum blockchain rather than centralized servers.

Examples include:

Decentralized finance (DeFi) platforms

Blockchain-based games

Voting systems

Supply chain tracking systems

3. Decentralized Finance (DeFi) Infrastructure

Ethereum supports financial services without banks through **Decentralized Finance**, allowing activities such as lending, borrowing, trading, and payments directly on the blockchain.

4. Token Creation and Digital Assets

Ethereum allows organizations to create their own tokens using standards such as **ERC-20** and **ERC-721**, which power cryptocurrencies and NFTs.

5. Secure and Transparent Transactions

All transactions and contract executions are recorded on a **distributed ledger**, ensuring transparency, immutability, and security without a central authority.

THANK YOU