Devi Ahilya University, Indore, India Institute of Engineering & Technology			IV B.E. (Information Technology			
Subject Code & Name	**Instructions Hours per Week**		**Credits**			
ITR8E3	**L**	**T**	**P**	**L**	**T**	**P**	**Total**
Blockchain Architecture Design and Use Cases	**3**	**1**	**2**	**3**	**1**	**1**	**5**

Learning Objectives:

- To understand real use cases for Blockchain
- To Create Blockchain network with existing tools and framework
- To Understand the Blockchain architecture and framework
- To Understand Blockchain tools for blockchain development.

Prerequisites: Basic programming knowledge, Basic Fundamentals of Blockchain

Unit I
Introduction to blockchain: Introduction: History, basics, architecture conceptualization, crypto primitives
Unit II
Basics, distributed consensus, consensus in bitcoin, permissioned blockchain, basics, consensus, RAFT consensus, byzantine general problem.
Unit III
Blockchain for enterprise-overview, components hyperledger fabric and transaction flow, membership and identity management, hyperledger fabric network setup, blockchain use cases.
Unit IV
Blockchain in financial series: payment and secure trading, compliance and mortgage, financial trade, global trade
Unit V
Blockchain security: Overview, membership and access control in fabric, privacy in fabric, fabric side DB, blockchain and AI, blockchain ecosystem, ethereum, ethereum development tools and cluorum

Books Recommended

- Block chain Technology, By steve tale
- Block chain revoluation,by Don Tapscott & Alen Tapscott
- Blockchain Blueprint,By Ray Toffler

Learning Outcomes:
Upon Completing the Course student will learn the function of Blockchains as a method of securing distributed ledgers, how consensus on their contents is achieved, and the new applications that they enable. It covers the technological underpinnings of blockchain operations as distributed data structures and decision making systems, their functionality and different architecture types.