JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., ACT No.30 of 2008)
ANANTHAPURAMU – 515 002 (A.P) INDIA

MASTER OF COMPUTER APPLICATIONS

Course Code	BLOCK CHAIN TECHNOLOGIES	L	T	P	C
21F00305c		3	0	0	3
	Semester	III			

Course Objectives:

- This course is intended to study the basics of Block chain technology. During this course learner will explore various aspects of Block chain technology like application in various domains. By implementing learner will have idea about private and public Block chain, and smart contract

Course Outcomes (CO): Student will be able to

- Understand and explore the working of Block chain technology (Understanding)
- Analyze the working of Smart Contracts (Analyze)
- Understand and analyze the working of Hyper ledger (Analyze).
- Apply the learning of solidity and de-centralized apps on Ethereum (Apply).

UNIT - I — Lecture Hrs:

Introduction of Cryptography and Block chain: What is Block chain, Block chain Technology Mechanisms &Networks, Block chain Origins, Objective of Block chain, Block chain Challenges, Transactions And Blocks, P2P Systems, Keys As Identity, Digital Signatures, Hashing, and public key cryptosystems, private vs. public Block chain

UNIT - II — Lecture Hrs:

Bit Coin and Crypto currency: What is Bitcoin, The Bitcoin Network, The Bitcoin Mining Process, Mining Developments, Bitcoin Wallets, Decentralization and Hard Forks, Ethereum Virtual Machine (EVM), Merkle Tree, Double-Spend Problem, Blockchain And Digital Currency, Transactional Blocks, Impact Of Block chain Technology On Crypto currency.

UNIT - III — Lecture Hrs:

Introduction to Ethereum: What is Ethereum, Introduction to Ethereum, Consensus Mechanisms, How Smart Contracts Work, Metamask Setup, Ethereum Accounts, Receiving Ether's What's a Transaction?, Smart Contracts.

UNIT - IV — Lecture Hrs:

Introduction to Hyper ledger: What is Hyper ledger? Distributed Ledger Technology & its Challenges, Hyper ledger & Distributed Ledger Technology, Hyper ledger Fabric, Hyper ledger Composer.

UNIT - V

Block chain Applications: Internet of Things, Medical Record Management System, Domain Name Service and Future of Block chain, Alt Coins

Text Books:

1. Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven
2. Goldfeder, Bitcoin and Cryptocurrency Technologies: A Comprehensive
3. Introduction, Princeton University Press (July 19, 2016).
4. Antonopoulos, Mastering Bitcoin.
5. Antonopoulos and G. Wood, Mastering Ethereum.
6. D. Drescher, Blockchain Basics. Apress, 2017.