MSCIT SEMESTER IV SYLLABUS FOR INTERNAL EXAM
APRIL 2021

SR.NO.	COURSE	SYLLABUS FOR INTERNAL TEST
1	Blockchain	**UNIT I:** Blockchain: Introduction, History, Centralised versus Decentralised systems, Layers of blockchain, Importance of blockchain, Blockchain uses and use cases. Working of Blockchain: Blockchain foundation, Cryptography, Game Theory, Computer Science Engineering, Properties of blockchain solutions, blockchain transactions, distributed consensus mechanisms, Blockchain mechanisms, Scaling blockchain Working of Bitcoin: Money, Bitcoin, Bitcoin blockchain, bitcoin network, bitcoin scripts, Full Nodes and SVPs, Bitcoin wallets **UNIT II:** Ethereum: three parts of blockchain, Ether as currency and commodity, Building trustless systems, Smart contracts, Ethereum Virtual Machine, The Mist browser, Wallets as a Computing Metaphor, The Bank Teller Metaphor, Breaking with Banking History, How Encryption Leads to Trust, System Requirements, Using Parity with Geth, Anonymity in Cryptocurrency, Central Bank Network, Virtual Machines, EVM Applications, State Machines, Guts of the EVM, Blocks, Mining's Place in the State Transition Function, Renting Time on the EVM, Gas, Working with Gas, Accounts, Transactions, and Messages, Transactions and Messages, Estimating Gas Fees for Operations, Opcodes in the EVM Solidity Programming: Introduction, Global Banking Made Real, Complementary Currency, Programming the EVM, Design Rationale, Importance of Formal Proofs, Automated Proofs, Testing, Formatting Solidity Files, Reading Code, Statements and Expressions in Solidity, Value Types, Global Special Variables, Units, and Functions,
2	Cyber Forensics	**Unit I:** Computer Forensics: The present Scenario, The Investigation Process, Computers – Searching and Seizing, Electronic Evidence, Procedures to be followed by the first responder. **Unit II:** Setting up a lab for Computer Forensics, Hard Disks and File Systems, Forensics on Windows Machine, Acquire and Duplicate Data **Unit III:** Recovery of deleted files and partitions, Using Access Data FTK and Encase for forensics Investigation,
3	Deep Learning	**Unit I:** Applied Math and Machine Learning Basics: Linear Algebra: Scalars, Vectors, Matrices and Tensors , Multiplying Matrices and Vectors , Identity and Inverse Matrices, Linear Dependence and Span , norms, special matrices and vectors, eigen decompositions. Numerical Computation: Overflow and under flow, poor conditioning, Gradient Based Optimization, Constraint optimization **Unit II:** Deep Networks: Deep feedforward network , regularization for deep learning , Optimization for Training deep models

| 4 | Information Security Auditing | **Unit I:**
Secrets of a Successful Auditor Understanding the Demand for IS Audits Understanding Policies, Standards, Guidelines, and Procedures Understanding Professional Ethics Understanding the Purpose of an Audit Differentiating between Auditor and Auditee Roles Implementing Audit Standards Auditor Is an Executive Position Understanding the Corporate Organizational Structure Governance Strategy Planning for Organizational Control Overview of Tactical Management Planning and Performance Overview of Business Process Reengineering Operations Management Summary Audit Process Understanding the Audit Program Establishing and Approving an Audit Charter Preplanning Specific Audits Performing an Audit Risk Assessment Determining Whether an Audit Is Possible Performing the Audit Gathering Audit Evidence Conducting Audit Evidence Testing Generating Audit Findings Report Findings Conducting Follow-up (Closing Meeting)
Unit II:
Information Systems Acquisition and Development Project Governance and Management Business Case and Feasibility Analysis System Development Methodologies Control Identification and Design Testing Methodologies Configuration and Release Management System Migration, Infrastructure Deployment and Data Conversion Post-implementation Review |