Visvesvaraya Technological University

"Jnana Sangama" Belagavi-590018, Karnataka State, India

Dr. A. S. Deshpande B.E., M.Tech., Ph.D.
Registrar

Phone: (0831) 2498100
Fax: (0831) 2405467

Ref: VTU/BGM/Aca/A9/2020-21/ 5925

Dated: 9 FEB 2021

NOTIFICATION

Subject: Modified Syllabus of postgraduate programmes' subject "BLOCKCHAIN TECHNOLOGY" regarding...

Reference: Hon'ble Vice-Chancellor's approval dated 08.02.2021

A new subject "**BLOCKCHAIN TECHNOLOGY (20SCN15, 20SCS23, 20SAM254)** was introduced for the 2020 scheme of following postgraduate programmes

1. M.Tech., in COMPUTER NETWORK ENGINEERING (SCN),
2. M.Tech., in COMPUTER SCIENCE & ENGINEERING(SCS)
3. M.tech., in ARTIFICIAL INTELLIGENCE & MACHINE LEARNING(SAM)

Due to the non-availability of the textbook mentioned in the published syllabus, the board of studies in CSE /ISE has modified the syllabus and is attached with this notification for the use of students and faculty.

All the principals of the engineering colleges offering above mentioned programmes are hereby informed to bring to the notice of all the concerned.

Sd/-
REGISTRAR

To,

The Principals of all the engineering colleges coming under the ambit of University and offering above mentioned M.Tech., programmes.

Copy to-

1. To Hon'ble Vice-Chancellor through the secretary to VC for kind information
2. The Registrar (Evaluation) for information and needful.
3. The chairperson BOS in CSE/ISE for information
4. The Regional Directors (I/c) of all the regional offices of VTU for circulation.
5. The Special Officer CNC VTU Belagavi for uploading on VTU website
6. PS to Registrar VTU Belagavi for information
7. All the concerned Special Officer/s and Caseworker/s of the academic section, VTU, Belagavi

09/2/2021

REGISTRAR

M.TECH IN **COMPUTER NETWORK ENGINEERING (SCN),**
COMPUTER SCIENCE & ENGINEERING(SCS)
ARTIFICIAL INTELLIGENCE & MACHINE LEARNING(SAM)

Choice Based Credit System (CBCS) and Outcome Based Education
(OBE) SEMESTER - I

BLOCKCHAIN TECHNOLOGY

Course Code	20SCN15, 20SCS23, 20SAM254,	CIE Marks	40
Teaching Hours/Wee(L:P:S)	3:0:2	SEE Marks	60
Credits	04	Exam Hours	03

Course Objectives:

The blockchain technology course allows the students to explore the driving force behind the cryptocurrency Bitcoin. Along with the Decentralization, Cryptography, Bitcoins with its alternative coins, Smart contracts and outside of currencies.

Module-1

Blockchain 101: Distributed systems, History of blockchain, Introduction to blockchain, Types of blockchain, CAP theorem and blockchain, Benefits and limitations of blockchain.

Module-2

Decentralization and Cryptography:
Decentralization using blockchain, Methods of decentralization, Routes to decentralization, Decentralized organizations. Cryptography and Technical Foundations: Cryptographic primitives, Asymmetric cryptography, Public and private keys

Module-3

Bitcoin and Alternative Coins A: Bitcoin, Transactions, Blockchain, Bitcoin payments B: Alternative Coins, Theoretical foundations, Bitcoin limitations, Namecoin, Litecoin, Primecoin, Zcash

Module-4

Smart Contracts and Ethereum 101: Smart Contracts: Definition, Ricardian contracts. Ethereum 101:Introduction, Ethereum blockchain, Elements of the Ethereum blockchain, Precompiled contracts.

Module-5

Alternative Blockchains: Blockchains Blockchain-Outside of Currencies: Internet of Things, Government, Health, Finance, Media

Course outcomes:

At the end of the course the student will be able to:

1. Understand the types, benefits and limitation of blockchain.
2. Explore the blockchain decentralization and cryptography concepts.
3. Enumerate the Bitcoin features and its alternative options.
4. Describe and deploy the smart contracts

5. Summarize the blockchain features outside of currencies.

Question paper pattern:

The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 60.

- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub questions) from each module.
- Each full question will have sub question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.
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Textbook/ Textbooks

1 Mastering Blockchain - Distributed ledgers, decentralization and smart contracts explained, Author- Imran Bashir, Packt Publishing Ltd, Second Edition, ISBN 978-1- 78712-544-5, 2017

Reference Books

1 Bitcoin and Cryptocurrency Technologies, Author- Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller, Steven Goldfeder, Princeton University, 2016

2 Blockchain Basics: A Non-Technical Introduction in 25 Steps, Author- Daniel Drescher, Apress, First Edition, 2017

3 Mastering Bitcoin: Unlocking Digital Cryptocurrencies, Andreas M. Antonopoulos, O'Reilly Media, First Edition, 2014