

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

COURSE MODULE: BLOCKCHAIN TECHNOLOGIES

Course Coordinator: Prof. Umme Hani Sharrif				Academic Year : 2025-26	
Department: Master of Computer Application					
Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours	Total Hrs/ Sessions
				L:T: P:S	
MMCH311D	BLOCKCHAIN TECHNOLOGIES	PCC		3:0:0	40(TH)
<p>Course Learning Objective:</p> <p>The course will enable the students to:</p> <ol style="list-style-type: none"> 1. Demonstrate the basics of Block chain concepts using modern tools/technologies. 2. Illustrate the role of block chain applications in different domains including cyber security. 3. Evaluate the usage of Blockchain implementation/features for the given problem. 4. Exemplify the usage of bit coins and its impact on the economy. 5. Analyze the application of specific block chain architecture for a given problem. 					
<p>Teaching-Learning Process (General Instruction):</p> <ol style="list-style-type: none"> 1. Adopt different types of teaching methods to develop the outcomes through PowerPoint presentations and Video demonstrations. 2. Adopt collaborative (Group Learning) Learning in the class. 3. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills and develops thinking skills such as evaluating, generalizing, and analyzing information. 					
Module-1					
<p>Introduction to Blockchain, How Blockchain works, Blockchain vs Bitcoin, Practical applications, Public and Private key basics, pros and cons of Blockchain, Myths about Bitcoin.</p>					
TLP: PowerPoint Presentation, Chalk and Talk					

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Module-2

Block chain: Architecture, versions, variants, use cases, Life use cases of block chain, Block chain vs shared Database, Introduction to crypto currencies, Types, Applications. Ciphers, RC4.

TLP: PowerPoint Presentation, Chalk and Talk

Module-3

Concept of Double Spending, Hashing, Mining, Proof of work. Introduction to Merkel tree, Privacy ,payment verification , Resolving Conflicts , Creation of Blocks

TLP: PowerPoint Presentation, Chalk and Talk

Module-4

Introduction to Bitcoin, key concepts of Bitcoin, Merits and De Merits Fork and Segwits, Sending and Receiving bitcoins, choosing bitcoin wallet, Converting Bitcoins to Fiat Currency.

TLP: PowerPoint Presentation, Chalk and Talk

Module-5

Introduction to Ethereum, Advantages and Disadvantages, Ethereum vs Bitcoin, Introduction to Smart contracts, usage, application, working principle, Law and Regulations. Case Study.

TLP: PowerPoint Presentation, Chalk and Talk

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Course Outcomes:

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

Sl. No.	Description	Blooms Level
CO1	Demonstrate the basics of Block chain concepts using modern tools/technologies.	L2
CO2	Analyze the role of Block chain applications in different domains including cyber security.	L3
CO3	Evaluate the usage of Block chain implementation/features for the given problem..	L2
CO4	Exemplify the usage of bitcoins and its impact on the economy	L2
CO5	Analyze the application of specific block chain architecture for a given problem	L2

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

- Two Unit Tests each of **25 Marks**
- Two assignments each of **25 Marks** or one **Skill Development Activity of 50 marks** to attain the COs and POs
- The sum of two tests, two assignments/skill Development Activities, will be scaled down to 50 marks
- CIE methods/question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.**

SemesterEnd Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- 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 subquestions) from each module.
- Each full question will have a subquestion covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module

Assessment Details (both CIE and SEE)

