

Branch Name:	COMPUTER ENGINEERING (SOFTWARE ENGINEERING)
Program Code:	ET203
Course Title:	Blockchain Technology Practical
Course Code:	2ET2030305P
Pre-requisite Course:	Expertise in programming, basic knowledge of computer security, cryptography, networking, concurrent or parallel programming would help a student to understand the topics.

Course Objectives: To give students the understanding of emerging abstract models for Blockchain Technology and to familiarize with the functional/operational aspects of crypto currency eco-system.

Teaching and Examination Scheme:

Cre dit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	—	—	—	—	10	25	10	25	50

Course Contents:

Unit	Details	Contact Hours
1	Creating Merkle tree.	4
2	Creation of Block	3
3	Blockchain implementation	4
4	Creating ERC20 token	4
5	Blockchain implementation using Merkle Trees	3
6	Mining in Blockchain	3
7	Peer-to-Peer implementation using Blockchain	4
8	Creating Crypto-currency Wallet	4

Reference Books:

1. Andreas Antonopoulos, "Mastering Bitcoin: Unlocking Digital Crypto currencies", O'Reilly Media, Inc. 2014.
2. Melanie Swa, "Block chain ", O'Reilly Media 2014.

Course Outcomes:

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

Course Outcomes	Description	Bloom's Taxonomy Level
CO1	Knowledge of Blockchain Concepts and creating basic blocks.	Understanding (2), Applying (3)
CO2	Proficiency in Blockchain Development.	Understanding (2), Applying (3)
CO3	Ability to Design and Implement Blockchain Applications	Understanding (2), Applying (3)
CO4	Evaluation and Analysis of Blockchain Systems.	Understanding (2), Applying (3)
CO5	Knowledge of crypto currency and creating a basic form of it	Understanding (2), Applying (3)

Mapping of CO with PO and PSO

Course Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3	PS O4
CO1	H	M	M	L	M						L	M				
CO2	H	M	L	L	M						L	L				
CO3	H	M	M	L	L						L	M				
CO4	M	M	M	M	L						H	L				
CO5	H	L	L	M	M						H	L				

H: High, M: Medium, L: Low