Department of CSE

Details of Lesson Plan

S.No.	Particulars	Details
1.	Course Name	Fundamentals of Blockchain
2.	Course Code	COM-602
3.	Academic Year	2024-2025
4.	Semester	6th
5.	Number of Lesson plans	40
6.	Faculty Assigned	Sukhmeet Kour

Faculty Signature

Lesson Plan No. 1.1	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the basic functions and characteristics of Blockchain technology. b. Explain the historical evolution of Blockchain Technology. c. Identify various types and categories of Blockchain. d. Describe the basic architecture of Blockchain technology.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is Block and Chain? • What do you understand by Blockchain? • What are the real-life examples of blockchain? • Where is blockchain being used today? 2. **Development** (30 minutes) o Introducing the students to the course and all the avenues covered under it. o Familiarizing the students with the Course Credit & the Evaluation Criteria: • Attendance • Assignments • Reading & Writing skills • Communication skills • Professional Etiquette o Elucidating the Course Outcomes: • Articulate the history, types and applications of Blockchain. • Explain the Blockchain architecture in context of different crypto currency. • Understand the Generic elements of blockchain. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Blockchain • Hands-On coding and implementation • Ethical Considerations in Blockchain • Real-life blockchain Project

	Exercise (5 minutes) **Activity:** Pair students and ask them to list the tasks Blockchain technology performs when a user opens an application.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the evolution of Blockchain technology.

Lesson Plan No. 1.2	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the concept of Blockchain. b. Articulate the features and uses of Blockchain. c. Understand the types of blockchain
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What are the uses of blockchain? • What are the categories of blockchain? • Difference between public and private blockchain? 2. **Development** (30 minutes) o Introducing the students to the course and all the avenues covered under it. o Familiarizing the students with the Course Credit & the Evaluation Criteria: • Attendance • Assignments • Reading & Writing skills • Communication skills • Professional Etiquette o Elucidating the Course Outcomes: • Articulate the types and applications of Blockchain. • Explain the Blockchain architecture in context of different crypto currency. • Understand the types of blockchain o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Distributed ledger • Multiple Choice questions for practice **Exercise (5 minutes)** **Activity:** Short quiz to assess understanding of key concepts.

	Research and present a case study on a specific application of blockchain technology.
Closure	Summarize the key points covered in the lesson. Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the real life examples of Blockchain technology.

Lesson Plan No. 1.3	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Able to comprehend the concepts of distributed ledger. b. Understand the different categories of blockchain networks.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	Introduction (5 minutes) 1. Pre-Discussion Questions: • What is ledger? • What is distributed ledger in blockchain? • What is the importance of distributed ledger? 2. Development (30 minutes) o Introducing the students to the course and all the avenues covered under it. o Brief overview from early cryptographic systems to modern blockchain networks. **How Blockchain Works:** Transaction creation, validation, and block addition. Chain integrity through cryptographic hashing. o Elucidating the Course Outcomes: • Explain distributed ledger and its significance in blockchain technology. • Explain how distributed ledger works in decentralized networks. • Understand the categories of blockchain. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Distributed ledger • Multiple Choice questions for practice **Exercise (5 minutes)** Activity: Pair students and ask them to discuss and list potential use cases of blockchain technology in various industries (e.g., finance, supply chain, healthcare).

	Discussion: What advantages does blockchain provide over traditional systems?
Closure	Summarize the key points covered in the lesson. Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the real-life examples of Blockchain technology.

Lesson Plan No. 1.4	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Able to comprehend the concepts of distributed ledger. b. Able to comprehend the concepts of public, private and consortium blockchain. c. Understand the different uses of blockchain networks. d. Articulate the different categories of blockchain networks.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	Introduction (5 minutes) 1. Pre-Discussion Questions: • What is consortium? • What are the types of blockchain? • What is the importance of consortium blockchain? • Can you name some popular blockchain platforms (e.g., Bitcoin, Ethereum)? • Do you think all blockchains work the same way? 2. Development (30 minutes) o Introducing the students to the course and all the avenues covered under it. o Briefly mention: Public, Private, Consortium, and Hybrid blockchains. o Brief overview from early cryptographic systems to modern blockchain networks. Consortium Blockchain (7 minutes) • Definition: Partially decentralized; controlled by a group of organizations. • Examples: R3 Corda (Financial institutions), Energy Web Foundation (Energy Sector). • Use Cases: Collaborative Research, Cross-Industry Data Sharing. • Pros & Cons: Shared control and high efficiency but requires trust between participants. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Distributed ledger • Multiple Choice questions for practice

	Exercise (5 minutes) Activity: Pair students and ask them to categorize the following use cases into Public, Private, Consortium, or Hybrid Blockchains: **Discussion:** What advantages does blockchain provide over traditional systems?
Closure	Summarize the key points covered in the lesson. Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the examples of consortium.

Lesson Plan No. 1.5	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Formulate solutions using Blockchain technology for real world applications. b. Understand the Blockchain architecture in context of different cryptocurrency.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	Introduction (5 minutes) 1. Pre-Discussion Questions: • What if the data is hacked or get corrupted? • What are the uses of blockchain? • Which banks uses the blockchain technology? 2. Development (30 minutes) o Introducing the students to the course and all the avenues covered under it. o Familiarizing the students with the Course . o Elucidating the Course Outcomes: • Differentiate between Hyperledger and solidity. • Explain permissionless and permissioned blockchain. • Understand the blockchain networks and nodes. • How to create a block in blockchain? o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Ethereum. • Multiple Choice questions for practice **Exercise (5 minutes)** Activity: Short quiz to assess understanding of key concepts. Case study on a specific application of blockchain technology. **Discussion:** What advantages does blockchain provide over traditional systems?

Closure	Summarize the key points covered in the lesson. Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Class participation during discussions.

Lesson Plan No. 1.6	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand and articulate what blockchain technology is and how it functions. b. List and explain the primary objectives of blockchain, including decentralization, transparency, security, efficiency, trust, automation, data integrity, privacy, and accessibility.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	Introduction (5 minutes) 1. Pre-Discussion Questions: • What if the data is hacked or get corrupted? • What is the significance of blockchain? • What are the applications of blockchain? • Which language uses blockchain technology? 2. Development (30 minutes) o Introducing the students to the course and all the avenues covered under it. o Familiarizing the students with the Course. o Elucidating the Course Outcomes: • Explanation of network structure and the role of nodes in blockchain. • How to create a block in blockchain. • Step by step process of creating a block including the data structure and validation. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Ethereum. • Multiple Choice questions for practice • Overview of Ethereum and its applications • Interactive session with questions to reinforce understanding. **Exercise (5 minutes)** **Activity**: Short quiz to assess understanding of key concepts. Case study on a specific application of blockchain technology. **Discussion:** Review a specific application of blockchain technology
Closure	Summarize the key points covered in the lesson.

	Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. Research and write a short paper on a recent development in blockchain technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Class participation during discussions.

Lesson Plan No. 2.1	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Explain the Blockchain architecture in context of different crypto currency. b. Understand the concept of Bitcoin and its features. c. Formulate solutions using blockchain technology for real world applications.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What do you understand by Multichain and its objectives? • What is Bitcoin? • What are the features and operations of Bitcoin Blockchain? • What is Ethereum? 2. **Development** (30 minutes) o Introduce the students to Blockchain architecture. o Elucidating the Course Outcomes: • Articulate the history, types and applications of Blockchain. • Explain the Blockchain architecture in context of different crypto currency. • Understand the Generic elements of blockchain. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Blockchain architecture • Cryptocurrencies • Ethereum **Exercise (5 minutes)** **Activity:** Provide a concise definition of what blockchain technology is. Explain the concept of decentralization in the context of blockchain.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College.

	Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin.

Lesson Plan No. 2.2	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Explain the Blockchain architecture in context of different crypto currency. b. Understand the concept of Bitcoin and its features. c. Formulate solutions using blockchain technology for real world applications.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What do you understand by Multichain and its objectives? • What is Bitcoin? • What are the features and operations of Bitcoin Blockchain? • What is Ethereum? 2. **Development** (30 minutes) o Introduce the students to Blockchain architecture. o Elucidating the Course Outcomes: • Articulate the history, types and applications of Blockchain. • Explain the Blockchain architecture in context of different crypto currency. • Understand the Generic elements of blockchain. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Blockchain architecture • Cryptocurrencies • Ethereum **Exercise (5 minutes)** **Activity:** Provide a concise definition of what blockchain technology is. Explain the concept of decentralization in the context of blockchain.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College.

	Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin.

Lesson Plan No. 2.3	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Explain the Blockchain architecture in context of different crypto currency. b. Able to comprehend the concepts of Bitcoin. c. Understand the different uses of bitcoin.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is bitcoin? • What are the characteristics of bitcoin? • Why we study about bitcoin? • Why we use bitcoin? 2. **Development** (30 minutes) o Introduce the students to Blockchain architecture. o Elucidating the Course Outcomes: • Differentiate between bitcoin and blockchain. • Explain the advantages and disadvantages of bitcoin. • How the bitcoin is different from fiat currency? o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to disadvantages of bitcoin. • Multiple Choice questions for practice **Exercise (5 minutes)** **Activity:** Provide a concise definition of what blockchain technology is. Research and present a case study from different industries in 2024.
Closure	Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail.

	Additional Reading: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin.

Lesson Plan No. 2.4	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Able to comprehend the concepts architecture of blockchain. b. Understand the different operations of bitcoin.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is multichain? • What are the characteristics of multichain? • Why we study about multichain? • Why we use multichain? 2. **Development** (30 minutes) o Introduce the students to Multichain and its characteristics. o Elucidating the Course Outcomes: • Differentiate between multichain and blockchain. • Explain the advantages and disadvantages of multichain. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to disadvantages of multichain. • Multiple Choice questions for practice **Exercise (5 minutes)** **Activity:** Provide a concise definition of what blockchain technology is. Research and present a case study from different industries in 2024.
Closure	Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail.

	Additional Reading: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin, multichain.

Lesson Plan No. 2.5	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Be able to comprehend the concepts and structure of a block in blockchain. b. Understand the role and significance of hashing in blockchain.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Introduce the topic Blockchain Architecture • What is a block in blockchain? • What is hashing and why is it important? • Why study blocks and hashing in blockchain? • Why we use bitcoin? 2. **Development** (30 minutes) o Introduce the students to Blockchain architecture and its characteristics. o Elucidating the Course Outcomes: • Understand the structure and components of a block. • Explain the purpose and process of hashing. • Discuss the importance of these concepts in blockchain technology. o Exemplifying the Activities under Blockchain Technology: • Detailed explanation of block structure (header, transactions, nonce, previous block hash). • Explanation of hashing algorithms (SHA-256, etc.). **Exercise (5 minutes)** **Activity:** Provide a concise definition of what blockchain technology is. Short quiz to assess understanding of key concepts. Research and present a case study from different industries in 2024.
Closure	Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. Acquainting them with the Blockchain Technology.

	Suggested Readings **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin, multichain.

Lesson Plan No. 2.6	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the concepts of a distributed peer-to-peer (P2P) network in blockchain. b. Comprehend how decentralization enhances blockchain technology.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Introduce the topic distributed P2P networks. • What is a P2P network? • Why is decentralization important in blockchain? • How does a P2P network function? 2. **Development** (30 minutes) ○ Introduce the students to distributed P2P network and its characteristics. ○ Elucidating the Course Outcomes: • Understand the architecture of a P2P network. • Explain the advantages of decentralization in blockchain. • Discuss the challenges faced by P2P networks. ○ Exemplifying the Activities under Blockchain Technology: • Detailed explanation of block structure (header, transactions, nonce, previous block hash). • Case studies on successful P2P blockchain networks (Bitcoin, Ethereum). **Exercise (5 minutes)** **Activity:** Provide a concise definition of what blockchain technology is. Short quiz to assess understanding of key concepts. Research and present a case study on a specific P2P blockchain network.
Closure	Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. Acquainting them with the Blockchain Technology.

	Suggested Readings **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin, multichain.

Lesson Plan No. 2.7	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the fundamental concepts of Bitcoin. b. Comprehend the different operations of Bitcoin.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Introduce the topic Bitcoin Fundamentals • What is bitcoin? • What are the characteristics of bitcoin? • Why we study about bitcoin? • Why we use bitcoin? 2. **Development** (30 minutes) o Introduce the students to Bitcoin Fundamentals and its characteristics. o Elucidating the Course Outcomes: • Differentiate between Bitcoin and traditional currencies. • Explain the advantages and disadvantages of bitcoin. • Discuss how Bitcoin transactions work. o Exemplifying the Activities under Blockchain Technology: • Detailed explanation of block structure (header, transactions, nonce, previous block hash). • Case studies on successful P2P blockchain networks (Bitcoin, Ethereum). • Overview of Bitcoin's history and market impact. **Exercise (5 minutes)** **Activity:** Provide a concise definition of what blockchain technology is. Short quiz to assess understanding of key concepts. Research and present a case study on a specific P2P blockchain network.
Closure	Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. Acquainting them with the Blockchain Technology.

	Suggested Readings **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin, multichain.

Lesson Plan No. 2.8	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the fundamental concepts of Ethereum. b. Comprehend the role and significance of other popular cryptocurrencies.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Introduce the topic Bitcoin Fundamentals • What is Ethereum? • What are the characteristics of Ethereum? • Why we study about Ethereum? • Why we use Ethereum? 2. **Development** (30 minutes) o Introduce the students to Bitcoin Fundamentals and its characteristics. o Elucidating the Course Outcomes: • Differentiate between Bitcoin and traditional currencies. • Explain the advantages and disadvantages of bitcoin. • Discuss how Bitcoin transactions work. • Understand the structure and functionality of Ethereum. • Explain the advantages and disadvantages of Ethereum. • Discuss the significance of other popular cryptocurrencies. o Exemplifying the Activities under Blockchain Technology: • Detailed explanation of Ethereum's smart contracts. • Case studies on successful P2P blockchain networks (Bitcoin, Ethereum). • Overview of Bitcoin's history and market impact. **Exercise (5 minutes)** **Activity:** Provide a concise definition of what blockchain technology is.

	Short quiz to assess understanding of key concepts. Research and present a case study on a specific P2P blockchain network.
Closure	Emphasize the importance of understanding blockchain technology in the context of modern digital innovation. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin, multichain.

Lesson Plan No. 3.1	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Explain the concept of Consensus and its importance. b. Comprehend different consensus algorithm and justify their appropriateness for different applications. c. Difference between Proof of Work (PoW) and Proof of Stake (PoS).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What do you understand by Consensus? • Why it is importance? • What are the different algorithms of Consensus? 2. **Development** (30 minutes) o Introduce the students to Consensus Mechanism. o Elucidating the Course Outcomes: • Explain the importance of consensus. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Consensus • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Provide a concise definition of what consensus is. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail.

	Additional Reading: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin.

Lesson Plan No. 3.2	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the importance of consensus mechanisms in blockchain. b. Comprehend different consensus algorithm and justify their appropriateness for different applications. c. Comprehend the basic principles and functions of consensus mechanisms.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is a consensus mechanism? • Why are consensus mechanisms crucial in blockchain technology? • Overview of different consensus mechanisms. 2. **Development** (30 minutes) o Introduce the students to Consensus Mechanism. o Elucidating the Course Outcomes: • Understand the role of consensus in achieving distributed agreement. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Consensus • Detailed explanation of how consensus mechanisms work. • Discussion on real-world examples of consensus failures and successes. • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Provide a concise definition of what consensus is. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology.

	Suggested Readings **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Consensus Mechanism.

Lesson Plan No. 3.3	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the importance of consensus mechanisms in blockchain. b. Understand the principles and process of Proof of Work (PoW). c. Comprehend the advantages and disadvantages of PoW. d. Difference between Proof of Work (PoW) and Proof of Stake (PoS). e. Comprehend different consensus algorithm and justify their appropriateness for different applications. f. Comprehend the basic principles and functions of consensus mechanisms.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is a consensus mechanism? • Why are consensus mechanisms crucial in blockchain technology? • What is PoW? • Why is PoW important in blockchain? • Brief history and application of PoW in Bitcoin 2. **Development** (30 minutes) o Introduce the students to Consensus Mechanism. o Elucidating the Course Outcomes: • Understand the role of consensus in achieving distributed agreement. • Understand how PoW functions to secure blockchain. • Discuss the advantages and disadvantages of PoW. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Consensus • Detailed explanation of how consensus mechanisms work. • Discussion on real-world examples of consensus failures and successes. • Cryptocurrencies

	Exercise (5 minutes) **Activity:** Provide a concise definition of what consensus is. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Consensus Mechanism.

Lesson Plan No. 3.4	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Explain the concept of Consensus and its importance. b. Comprehend different consensus algorithm and justify their appropriateness for different applications. c. Difference between Proof of Work (PoW) and Proof of Stake (PoS).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is a consensus mechanism? • Why are consensus mechanisms crucial in blockchain technology? • What do you understand by Consensus? • Why it is importance? • What are the different algorithms of Consensus? 2. **Development** (30 minutes) o Introduce the students to Consensus Mechanism. o Elucidating the Course Outcomes: • Understand the role of consensus in achieving distributed agreement. • Understand how PoW functions to secure blockchain. • Discuss the advantages and disadvantages of PoW. • Explain the importance of consensus. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Consensus • Detailed explanation of how consensus mechanisms work. • Discussion on real-world examples of consensus failures and successes. • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Provide a concise definition of what consensus is. Explain the concept of proof of work and proof of stake.

Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Consensus Mechanism.

Lesson Plan No. 3.5	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Explain the concept of Consensus and its importance. b. Comprehend different consensus algorithm and justify their appropriateness for different applications. c. Difference between Proof of Work (PoW) and Proof of Stake (PoS).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is a consensus mechanism? • Why are consensus mechanisms crucial in blockchain technology? • What do you understand by Consensus? • Why it is importance? • What are the different algorithms of Consensus? 2. **Development** (30 minutes) o Introduce the students to Consensus Mechanism. o Elucidating the Course Outcomes: • Understand the role of consensus in achieving distributed agreement. • Discuss the advantages and disadvantages of PoW. • Explain the importance of consensus. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Consensus • Detailed explanation of how consensus mechanisms work. • Discussion on real-world examples of consensus failures and successes. • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Provide a concise definition of what consensus is. Explain the concept of proof of work and proof of stake.

Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher. It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Consensus Mechanism.

Lesson Plan No. 4.1	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Explain the Blockchain architecture in context of different crypto currency. b. Understand the concept of Bitcoin and its features. c. Formulate solutions using blockchain technology for real world applications.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What do you understand by Multichain and its objectives? • What is Bitcoin? • What are the features and operations of Bitcoin Blockchain? • What is Ethereum? 2. **Development** (30 minutes) ○ Introduce the students to Consensus Mechanism. ○ Elucidating the Course Outcomes: • Explain the importance of consensus. • Compare the consensus algorithms. ○ Exemplifying the Activities under Blockchain Technology: • Basic Introduction to Consensus • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Provide a concise definition of what consensus is. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on Ethereum, Bitcoin.

Lesson Plan No. 4.2	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the characteristics of decentralized applications. b. Explain the importance and use cases of De-Fi (Decentralized Finance) applications. c. Analyse smart contracts and decentralized oracle networks (DONs).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What are Decentralized Applications (D Apps)? • How does De-Fi differ from traditional finance? • What are smart contracts? • What role do decentralized oracle networks (DONs) play? 2. **Development** (30 minutes) o Introduce the students to D Apps and their significance. o Elucidating the Course Outcomes: • Explain the importance of D Apps. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Discuss real-world use cases of De-Fi applications: • Introduction to Smart Contracts and their role in D Apps. • Understanding Decentralized Oracle Networks (DONs). • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Define and differentiate between Smart Contracts and Decentralized Applications. Explain the role of oracles in blockchain technology.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Discuss the potential benefits and risks of decentralized finance.

Lesson Plan No. 4.3	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the characteristics of decentralized Finance. b. Explain the importance and use cases of De-Fi (Decentralized Finance) applications. c. Analyse smart contracts and decentralized oracle networks (DONs).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What are Decentralized Applications (De- Fi)? • How does De-Fi differ from traditional finance? • What are smart contracts? • What role do decentralized oracle networks (DONs) play? 2. **Development** (30 minutes) o Introduce the students to De- Fi and their significance. o Elucidating the Course Outcomes: • Explain the importance of De- Fi. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Discuss real-world use cases of De-Fi applications: • Introduction to Smart Contracts and their role in D Apps. • Understanding Decentralized Oracle Networks (DONs). • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Define and differentiate between Smart Contracts and Decentralized Applications. Explain the role of oracles in blockchain technology.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Discuss the potential benefits and risks of decentralized finance.

Lesson Plan No. 4.4	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the characteristics of decentralized Finance. b. Explain the importance and use cases of De-Fi (Decentralized Finance) applications. c. Analyse smart contracts and decentralized oracle networks (DONs).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What are Decentralized Applications (De- Fi)? • How does De-Fi differ from traditional finance? • What are smart contracts? • What role do decentralized oracle networks (DONs) play? 2. **Development** (30 minutes) o Introduce the students to DONs and their significance. o Elucidating the Course Outcomes: • Explain the importance of DONs. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Discuss real-world use cases of DONs applications: • Introduction to Smart Contracts and their role in D Apps. • Understanding Decentralized Oracle Networks (DONs). • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Define and differentiate between Smart Contracts and Decentralized Applications. Explain the role of oracles in blockchain technology.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Discuss the potential benefits and risks of decentralized finance.

Lesson Plan No. 4.5	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the use- cases of DONs. b. Explain the importance and use cases of DONs applications. c. Analyse smart contracts and decentralized oracle networks (DONs).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What are Decentralized Applications (De- Fi)? • How does De-Fi differ from traditional finance? • What are smart contracts? • What role do decentralized oracle networks (DONs) play? 2. **Development** (30 minutes) o Introduce the students to DONs and their significance. o Elucidating the Course Outcomes: • Explain the importance of DONs. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Discuss real-world use cases of DONs applications: • Introduction to Smart Contracts and their role in D Apps. • Understanding Decentralized Oracle Networks (DONs). • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Define and differentiate between Smart Contracts and Decentralized Applications. Explain the role of oracles in blockchain technology.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Discuss the potential benefits and risks of decentralized finance.

Lesson Plan No. 4.6	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the use- cases of Smart Contract. b. Explain the importance and use cases of Smart Contract applications. c. Analyse smart contracts and decentralized oracle networks (DONs).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is Smart Contract • How does De-Fi differ from traditional finance? • What is Smart Contract? • What role do decentralized oracle networks (DONs) play? 2. **Development** (30 minutes) o Introduce the students to DONs and their significance. o Elucidating the Course Outcomes: • Explain the importance of DONs. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Discuss real-world use cases of DONs applications: • Introduction to Smart Contracts and their role in D Apps. • Understanding Decentralized Oracle Networks (DONs). • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Define and differentiate between Smart Contracts and Decentralized Applications. Explain the role of oracles in blockchain technology.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Discuss the potential benefits and risks of decentralized finance.

Lesson Plan No. 4.7	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the use- cases of Smart Contract. b. Explain the importance and use cases of Smart Contract applications. c. Analyse smart contracts and decentralized oracle networks (DONs).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is Smart Contract • How does De-Fi differ from traditional finance? • What is Smart Contract? • What role do decentralized oracle networks (DONs) play? 2. **Development** (30 minutes) o Introduce the students to DONs and their significance. o Elucidating the Course Outcomes: • Explain the importance of DONs. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Discuss real-world use cases of DONs applications: • Introduction to Smart Contracts and their role in D Apps. • Understanding Decentralized Oracle Networks (DONs). • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Define and differentiate between Smart Contracts and Decentralized Applications. Explain the role of oracles in blockchain technology.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Discuss the potential benefits and risks of decentralized finance.

Lesson Plan No. 4.7	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: a. Understand the use- cases of Smart Contract. b. Explain the importance and use cases of Smart Contract applications. c. Analyse smart contracts and decentralized oracle networks (DONs).
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • What is Smart Contract • How does De-Fi differ from traditional finance? • What is Smart Contract? • What role do decentralized oracle networks (DONs) play? 2. **Development** (30 minutes) o Introduce the students to DONs and their significance. o Elucidating the Course Outcomes: • Explain the importance of DONs. • Compare the consensus algorithms. o Exemplifying the Activities under Blockchain Technology: • Discuss real-world use cases of DONs applications: • Introduction to Smart Contracts and their role in D Apps. • Understanding Decentralized Oracle Networks (DONs). • Cryptocurrencies **Exercise (5 minutes)** **Activity:** Define and differentiate between Smart Contracts and Decentralized Applications. Explain the role of oracles in blockchain technology.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Discuss the potential benefits and risks of decentralized finance.

Lesson Plan No. 5.1	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: Understand the importance of case studies in blockchain technology. Identify real-world applications where blockchain is used. Analyse the impact of blockchain technology on different industries.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Why are case studies important in understanding blockchain applications? • Can you name industries where blockchain is currently being used? • What are some of the challenges faced in implementing blockchain? 2. **Development** (30 minutes) o Introduce the concept of blockchain case studies. o Explain the structure of a case study analysis. o Elucidating the Course Outcomes: • Analyse the role of blockchain in real-world applications. • Understand key elements of a blockchain case study. o Exemplifying the Activities under Blockchain Technology: • Discuss a well-known blockchain case study. • Identify key lessons learned from blockchain implementations. **Exercise (5 minutes)** **Activity:** Choose a blockchain application and discuss its real-world impact. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the role of blockchain in a chosen industry.

Lesson Plan No. 5.2	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: Understand the importance of case studies in blockchain technology. Identify real-world applications where blockchain is used. Analyse the impact of blockchain technology on different industries.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Why are case studies important in understanding blockchain applications? • Can you name industries where blockchain is currently being used? • What are some of the challenges faced in implementing blockchain? 2. **Development** (30 minutes) o Introduce the concept of blockchain case studies. o Explain the structure of a case study analysis. o Elucidating the Course Outcomes: • Analyse the role of blockchain in real-world applications. • Understand key elements of a blockchain case study. o Exemplifying the Activities under Blockchain Technology: • Discuss a well-known blockchain case study. • Identify key lessons learned from blockchain implementations. **Exercise (5 minutes)** **Activity:** Choose a blockchain application and discuss its real-world impact. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the role of blockchain in a chosen industry.

Lesson Plan No. 5.3	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: Understand the importance of case studies in blockchain technology. Identify real-world applications where blockchain is used. Analyse the impact of blockchain technology on different industries.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Why are case studies important in understanding blockchain applications? • Can you name industries where blockchain is currently being used? • What are some of the challenges faced in implementing blockchain? 2. **Development** (30 minutes) o Introduce the concept of blockchain case studies. o Explain the structure of a case study analysis. o Elucidating the Course Outcomes: • Analyse the role of blockchain in real-world applications. • Understand key elements of a blockchain case study. o Exemplifying the Activities under Blockchain Technology: • Discuss a well-known blockchain case study. • Identify key lessons learned from blockchain implementations. **Exercise (5 minutes)** **Activity:** Choose a blockchain application and discuss its real-world impact. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the role of blockchain in a chosen industry.

Lesson Plan No. 5.4	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: Understand the importance of case studies in blockchain technology. Identify real-world applications where blockchain is used. Analyse the impact of blockchain technology on different industries.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Why are case studies important in understanding blockchain applications? • Can you name industries where blockchain is currently being used? • What are some of the challenges faced in implementing blockchain? 2. **Development** (30 minutes) o Introduce the concept of blockchain case studies. o Explain the structure of a case study analysis. o Elucidating the Course Outcomes: • Analyse the role of blockchain in real-world applications. • Understand key elements of a blockchain case study. o Exemplifying the Activities under Blockchain Technology: • Discuss a well-known blockchain case study. • Identify key lessons learned from blockchain implementations. **Exercise (5 minutes)** **Activity:** Choose a blockchain application and discuss its real-world impact. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the role of blockchain in a chosen industry.

Lesson Plan No. 5.5	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: Understand the importance of case studies in blockchain technology. Identify real-world applications where blockchain is used. Analyse the impact of blockchain technology on different industries.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Why are case studies important in understanding blockchain applications? • Can you name industries where blockchain is currently being used? • What are some of the challenges faced in implementing blockchain? 2. **Development** (30 minutes) o Introduce the concept of blockchain case studies. o Explain the structure of a case study analysis. o Elucidating the Course Outcomes: • Analyse the role of blockchain in real-world applications. • Understand key elements of a blockchain case study. o Exemplifying the Activities under Blockchain Technology: • Discuss a well-known blockchain case study. • Identify key lessons learned from blockchain implementations. **Exercise (5 minutes)** **Activity:** Choose a blockchain application and discuss its real-world impact. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the role of blockchain in a chosen industry.

Lesson Plan No. 5.6	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: Understand the importance of case studies in blockchain technology. Identify real-world applications where blockchain is used. Analyse the impact of blockchain technology on different industries.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Why are case studies important in understanding blockchain applications? • Can you name industries where blockchain is currently being used? • What are some of the challenges faced in implementing blockchain? 2. **Development** (30 minutes) o Introduce the concept of blockchain case studies. o Explain the structure of a case study analysis. o Elucidating the Course Outcomes: • Analyse the role of blockchain in real-world applications. • Understand key elements of a blockchain case study. o Exemplifying the Activities under Blockchain Technology: • Discuss a well-known blockchain case study. • Identify key lessons learned from blockchain implementations. **Exercise (5 minutes)** **Activity:** Choose a blockchain application and discuss its real-world impact. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the role of blockchain in a chosen industry.

Lesson Plan No. 5.7	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: Understand the importance of case studies in blockchain technology. Identify real-world applications where blockchain is used. Analyse the impact of blockchain technology on different industries.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Why are case studies important in understanding blockchain applications? • Can you name industries where blockchain is currently being used? • What are some of the challenges faced in implementing blockchain? 2. **Development** (30 minutes) o Introduce the concept of blockchain case studies. o Explain the structure of a case study analysis. o Elucidating the Course Outcomes: • Analyse the role of blockchain in real-world applications. • Understand key elements of a blockchain case study. o Exemplifying the Activities under Blockchain Technology: • Discuss a well-known blockchain case study. • Identify key lessons learned from blockchain implementations. **Exercise (5 minutes)** **Activity:** Choose a blockchain application and discuss its real-world impact. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the role of blockchain in a chosen industry.

Lesson Plan No. 5.8	Course Name: Fundamentals of Blockchain Technology	Course No.: COM-602

Objectives	**Introduction to Blockchain Technology** At the end of the lesson the student shall be able to: Understand the importance of case studies in blockchain technology. Identify real-world applications where blockchain is used. Analyse the impact of blockchain technology on different industries.
Teaching Aids (if any)	a. Slides with diagrams and definitions b. Video clips showing historical evolution of OS c. Chalkboard/Whiteboard
Teaching Development	**Introduction (5 minutes)** 1. **Pre-Discussion Questions:** • Why are case studies important in understanding blockchain applications? • Can you name industries where blockchain is currently being used? • What are some of the challenges faced in implementing blockchain? 2. **Development** (30 minutes) o Introduce the concept of blockchain case studies. o Explain the structure of a case study analysis. o Elucidating the Course Outcomes: • Analyse the role of blockchain in real-world applications. • Understand key elements of a blockchain case study. o Exemplifying the Activities under Blockchain Technology: • Discuss a well-known blockchain case study. • Identify key lessons learned from blockchain implementations. **Exercise (5 minutes)** **Activity:** Choose a blockchain application and discuss its real-world impact. Explain the concept of proof of work and proof of stake.
Closure	Sensitizing the students about the importance of exhibiting proper manners and code of conduct at the College. Acquainting them with the Blockchain Technology. **Suggested Readings** **Textbook**: *"Blockchain Basics "* by Daniel Drescher.

	It's ideal for beginners to understand the principles of blockchain technology without getting into too much technical detail. **Additional Reading**: *"Mastering Blockchain"* by Imran Bashir (For more technical aspects). • Topics Covered: Blockchain Architecture, Cryptography, Consensus Mechanisms, Bitcoin, Ethereum, Smart Contracts, Decentralized Applications (DApps).
Evaluation	• **Reflective Questions:** Allow students to discuss and answer. **Practice Question:** Write a short note on the role of blockchain in a chosen industry.