

Course Description:

Blockchain seems to be the latest buzzword that the business world is taking about. But what is it? And why should a high school student care? This course will seek to answer those questions. It will strip away the layers of complexity and sophistication to help students understand the key concepts of the blockchain. The course will introduce and discuss applications where blockchain has the greatest potential.

Module	Objectives
Module 1: Intro to Blockchain and The Blockchain	• Describe bitcoin, its creation, and how it functions
	• Define blockchain and distributed ledger technology
	• Differentiate between a private and public blockchain, and permission and nonpermissioned blockchains
	• Evaluate the principle of trust in society and how blockchain technology enables greater trust
	• List possible applications of blockchain technology

Module 2: Blockchain and Transactions	• Describe how ledgers record transactions and examine how double-entry bookkeeping paved the way for capitalism
	• Differentiate between centralized and decentralized ledgers
	• Define and give examples of intermediaries in today's economy
	• Explain transaction costs for both buyers and sellers
	• Describe how blockchain-based transactions can improve trust and reduce costs
	• Identify career opportunities in blockchain technology at banks and educational paths to enter those careers

Module 3: Blockchain and Education	• Evaluate the size and scope of the problem of fraudulent and fake degrees
	• Compare a blockchain-based credential with a traditional paper-based credential
	• Describe companies and projects that are utilizing blockchain-based credentials
	• Discuss the benefits and risks of using the blockchain for education credentials
	• Examine additional ways that blockchain technology can be used in education beyond credentials

Module 4: Blockchain and Identity	• Describe the problems of current identity management
	• List the limitations of biometric identification, paper-based documentation, and physical signatures
	• Differentiate between physical and digital identity
	• Define self-sovereign identity
	• Evaluate projects and companies that are creating blockchain-based solutions that help solve global identity problems
	• Discuss the growing field of blockchain jobs and careers in identity management

Module 5: Blockchain and Smart Contracts	• List the components of a contract and summarize why contracts are used
	• Provide examples of traditional contracts
	• Describe the problems with traditional contracts, contract law, and enforcement/execution
	• Define smart contract
	• Evaluate how blockchain technology, including the Ethereum blockchain, can be used to create and execute smart contracts
	• List examples of smart contract projects and applications
	• Examine the problems and risks with smart contracts (compared to traditional contracts)

Module 6: Blockchain and Music	• Define the problems with the existing music and record label industry
	• Describe how blockchain technology can be used in the music industry
	• Outline the benefits for musicians, artists, and fans by using blockchain based systems
	• Compare some existing blockchain music project and companies
	• Discuss the downsides or problems of using the blockchain for music rather than existing systems

***Module 7:
Blockchain and
Voting***

- Define the problems with the existing paper and electronic voting systems
- Describe how blockchain technology can be used in securing digital voting records
- Outline the potential benefits of blockchain technology when applied to elections and voting
- Discuss the downsides or problems of using the blockchain for voting rather than existing systems
- Compare and explain blockchain voting projects and companies

Module 8: Blockchain and Healthcare	• Outline the problems with medical records, including data breaches, privacy, and data management
	• Describe how blockchain technology can be used in controlling, securing, and monetizing personal healthcare records
	• Define the healthcare supply chain for medicine and identify problems with the supply chain
	• Evaluate the potential for blockchain to improve the healthcare supply chain
	• Identify career opportunities in healthcare and blockchain technology and educational paths to enter those careers