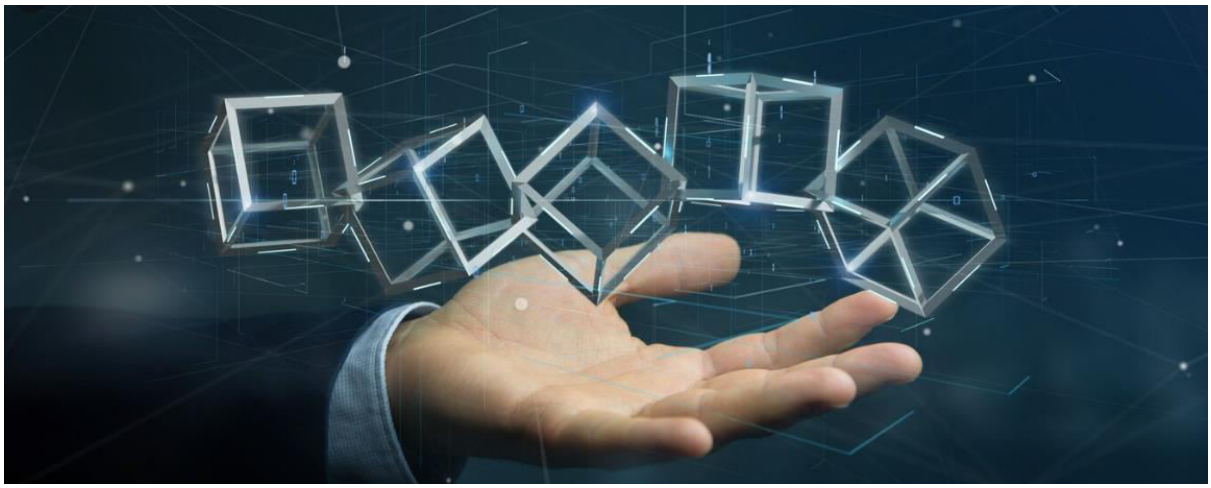

BLOCKCHAIN IN ESG

Professional Certificate in Blockchain for ESG

Course Code: IT_HM_I_010/25

Duration: 40 Hours

Delivery Format: Hybrid

Target Audience:

- MBA Students

Program Objectives:

- To equip MBA students with a comprehensive understanding of how blockchain technology can be strategically applied to address Environmental, Social, and Governance (ESG) challenges.
- To develop critical thinking skills regarding the opportunities and limitations of blockchain in sustainability.
- To enable learners to innovate and lead initiatives that leverage decentralized technologies for positive impact.

Detailed Syllabus

Module 1 (6 hours): Foundations of ESG and Blockchain

Objective: To define ESG frameworks and core blockchain concepts and understand how they intersect to enhance sustainability goals.

Topics:

- Understanding ESG: Environmental, Social, and Governance frameworks (UN SDGs, GRI, SASB)
- Blockchain Basics: decentralization, consensus, transparency, and immutability
- Intersection of ESG and Blockchain: How technology enhances sustainability goals

Activities:

- Case Study Discussion: IBM Food Trust, Provenance, VeChain in ethical sourcing
- Lectures and interactive discussions on ESG principles and blockchain fundamentals.

Assessments:

- Mini-Assignment: Write a short essay on one ESG challenge that can be solved using blockchain.

Module 2 (8 hours): Blockchain for Environmental Sustainability

Objective: To understand how blockchain is applied in environmental sustainability, specifically in carbon credit systems, energy tracking, and smart contracts for compliance.

Topics:

- Carbon Credit Systems: Tokenization and blockchain registries (e.g., Toucan, KlimaDAO)
- Energy Certificates and Renewable Tracking on Blockchain
- Smart Contracts for Environmental Compliance

Activities:

- Project Case Studies: Energy Web Foundation, dClimate
- Exploration of blockchain platforms and protocols used for environmental applications.

Assessments:

- Memo Task: Evaluate a blockchain-based platform for carbon tracking.

Module 3 (8 hours): Blockchain for Social Impact & Governance

Objective: To analyze how blockchain enhances social impact and governance, including supply chain transparency, anti-corruption efforts, and decentralized autonomous organizations (DAOs).

Topics:

- Supply Chain Transparency and Labor Rights: Everledger, Circulor
- Blockchain for Anti-Corruption and Fair-Trade Certification
- DAOs for Community Governance and Decision-Making
- Smart Contracts for Ethical Auditing and Traceability

Activities:

- Deep dive into case studies on supply chain transparency and fair trade.
- Discussions on the role of DAOs in community governance.

Assessments:

- Presentation Task: Analyze a social or governance-based blockchain application.

Module 4 (7 hours): Blockchain Technologies and Tools in ESG

Objective: To gain practical understanding of various blockchain technologies and tools relevant to ESG applications, including smart contract design and data integration.

Topics:

- Overview of ESG-Compatible Blockchains: Ethereum, Polygon, Celo, Hyperledger
- Smart Contract Design for ESG Applications
- Building ESG Dashboards: Data oracles, IoT, and blockchain integration
- Security, Scalability, and Sustainability Trade-offs

Activities:

- Comparative analysis of different ESG-compatible blockchain platforms.
- Introduction to data oracles and IoT integration with blockchain.

Assessments:

- Hands-on Activity: Design a basic ESG smart contract (no-code or logic mockup).

Module 5 (5 hours): ESG Risks, Greenwashing, and Blockchain Limitations

Objective: To identify and critically assess the risks, limitations, and regulatory challenges associated with using blockchain for ESG initiatives, including issues like greenwashing and energy consumption.

Topics:

- Risks and Challenges: Misreporting, greenwashing, and false claims
- Blockchain Limitations: Energy use, scalability, legal and ethical concerns
- Regulatory Perspectives: Global ESG standards and blockchain compliance

Activities:

- Critical analysis of real-world examples of greenwashing and misreporting in ESG.
- Discussions on the energy consumption of blockchain and potential solutions.

Assessments:

- Debate/Reflection: Is blockchain a truly sustainable solution for ESG?

Module 6 (6 hours): Capstone Project - ESG x Blockchain Innovation

Objective: To conceive, propose, and present an innovative blockchain-based solution for a chosen ESG issue.

Topics:

- Capstone Briefing: Selecting an ESG issue to solve using blockchain
- Proposal Guidelines: Problem identification, tool selection, implementation plan
- Pitch Practice: Storytelling with data and responsible tech narratives

Activities:

- Individual mentorship sessions for project development.
- Peer feedback sessions on project proposals and pitches.

Assessments:

- Final Project: Propose and present an individual blockchain-based ESG solution, including a 3-page written brief and a 5-minute recorded video pitch.