BLOCKCHAIN INTELLIGENCE ACADEMY

MODULE 5

Advanced Blockchain Intelligence

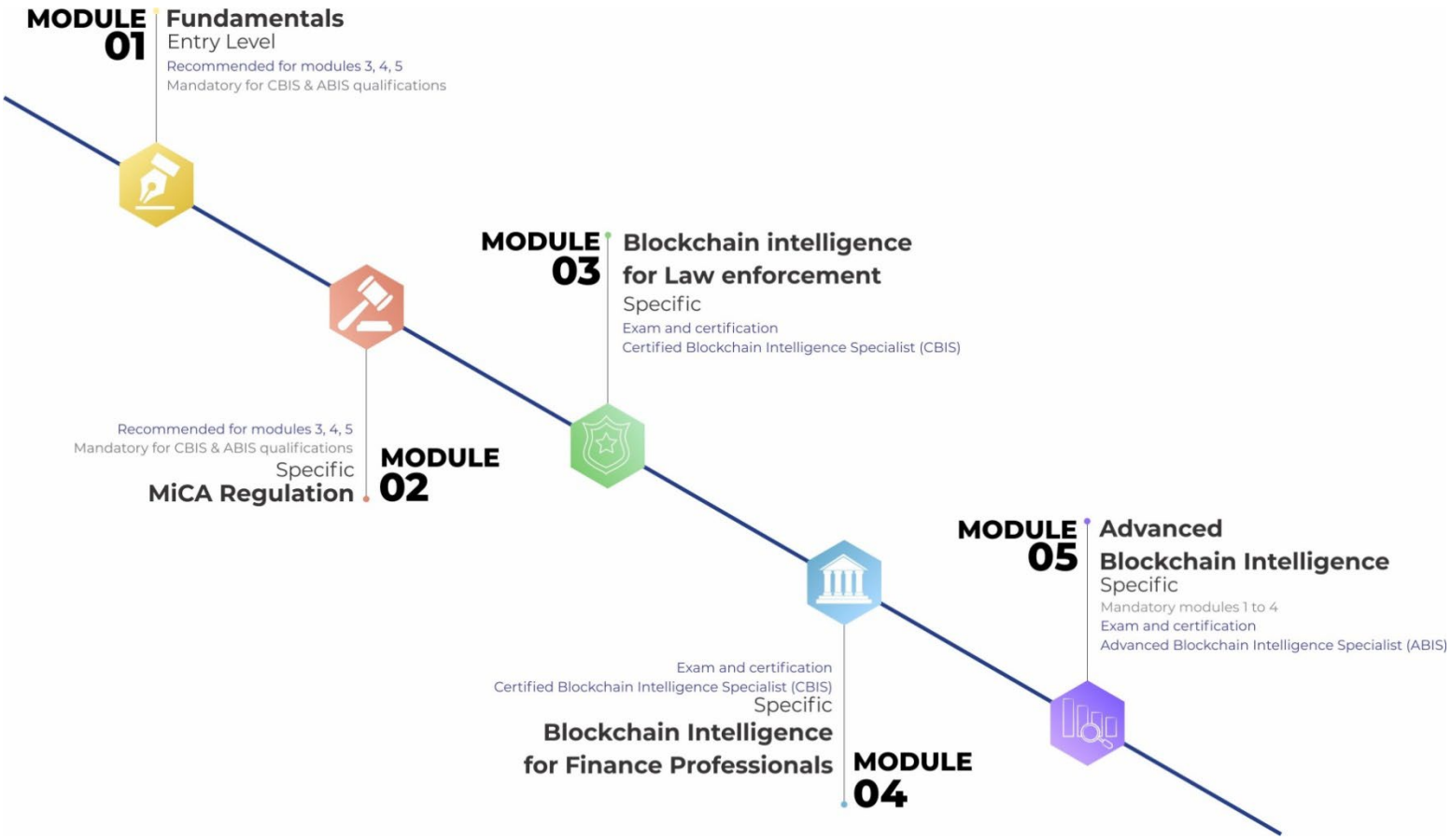
Module 5:

Advanced Blockchain Intelligence

The training program is part of the 5 general training modules in the “Blockchain Intelligence” specialization and is aimed particularly at individuals with technical expertise and prior experience in the field of blockchain.

The training program is interactive, offered in English for an international audience, and includes the practical use of a blockchain intelligence tool applied to case studies with real-life practical implications.

All participants will have access to the blockchain intelligence software provided by ChainArgos for the entire duration of the course and for up to 15 days after its completion.



We recommend attending the first four training modules of the Blockchain Intelligence Academy, which allow participants to obtain the “Blockchain Intelligence Specialist” certification, so that by completing this final module they can earn the “Advanced Blockchain Intelligence Specialist” certification.

COURSE OBJECTIVES

- Developing advanced skills for analyzing on-chain transaction graphs using network science methods and GNN-type algorithms.
- Building practical abilities in reverse engineering smart contracts and reconstructing DeFi/NFT exploits step by step.
- Familiarizing participants with techniques for de-anonymizing mixers, CoinJoins, and privacy-focused crypto assets (ring signatures, zk-SNARKs).
- Documenting methods for detecting and proving consensus-level attacks (re-orgs, 51% attacks, slashing events) on Proof-of-Work (PoW) and Proof-of-Stake (PoS) blockchains.
- Developing the ability to trace cross-chain value flows through bridges, atomic swaps, and liquidity networks.
- Training participants to use professional analysis tools (ChainArgos, GraphSense, Slither, Foundry, Neo4j) in a hands-on environment.

TARGET GROUP

The program is intended for professionals from regulatory, licensing, and supervisory authorities; blockchain analysts and investigators; cybersecurity analysts from SOC/CSIRT teams; AML/CFT/KYC officers in financial and banking institutions; experts from defense, law enforcement, and national security structures; as well as researchers or master's/PhD students interested in the security of ecosystems involving crypto assets.

The course is also open to other specialists who wish to develop their professional skills in the field of blockchain technology and value transfer through it.

COURSE CONTENT

1. Advanced Analysis of On-Chain Transaction Graphs

- Building and labeling the address–transaction graph; topological metrics; detecting suspicious clusters and anomalies.
- Data enrichment: integrating KYC/AML labels, darknet indicators, cyber IoCs, and geographic metadata to produce more accurate risk scores using data from the ChainArgos platform.

- Temporal flow analysis: detecting “peeling chains,” wash cycles, and burst patterns linked to attack financing.

2. Forensics on Smart Contracts and DeFi Ecosystems

- ABI-level analysis: decoding functions and events from transactions, correlating on-chain logs with off-chain data.
- Identifying critical permissions, vulnerability patterns (re-entrancy, over-approval, oracle manipulation), and reconstructing exploitation timelines.
- Practical use of Slither, Tenderly, Dune/SQL, and Foundry for monitoring and replicating attacks in a controlled environment.

3. De-anonymization of Mixers and Privacy-Oriented Crypto Assets

- CoinJoin, zk-mixers, ring signatures; combining taint analysis with ML-based pattern matching; assessing the level of evidentiary certainty.
- Temporal analysis and subset sum attacks on low-volume CoinJoins, along with correlating entropy bursts with on-chain events.
- Intelligent integration of off-chain data (IP/Tor metadata, exchange withdrawal timestamps) to strengthen probabilistic links.

4. Protocol- and Consensus-Level Investigations

- PoW/PoS artifacts, slashing events, deep re-orgs; demonstrating consensus attacks and calculating damages.
- Detecting selfish mining, time-bandit, and censorship attacks through analysis of block time distribution and difficulty variability.
- Economic modeling of attacker incentives and simulating attack scenarios with Monte Carlo methods to assess network resilience.

5. Cross-Chain Transactions and Bridge Security

- Bridge architectures (lock-and-mint, liquidity network, light client); correlating multi-chain deposits and withdrawals; identifying failure points and exploits.
- Advanced techniques for cross-chain entity resolution (address reuse, temporal correlation, common off-ramp) to achieve full value traceability.
- Live monitoring of bridge health (volume, latency, validator signatures) and setting up automated alerts for anomalies and potential exploits.

TRAINER

Dr. Alexandru Gheorghiță

He is an IT specialist with a PhD in distributed systems and cybersecurity, and over 15 years of practical experience in software engineering. Throughout his career, he has designed and implemented enterprise platforms with high scalability requirements, led technical and security audits for critical applications, and coordinated multidisciplinary teams in applied research projects on blockchain technology.

His expertise combines systems architecture, the development of mission-critical solutions for large-scale distributed systems, and on-chain transaction analytics. Dr. Gheorghiță regularly publishes technical articles and delivers professional training programs for organizations in both the public and private sectors. His teaching approach is structured, application-oriented, and supported by recent case studies in the field of blockchain forensics.

He completed trainer certification courses at ICI Bucharest and is a trainer at the Blockchain Intelligence Academy.

He is the coordinator of the “Advanced Forensics” working group within the Blockchain Intelligence Professionals Association (BIPA).

COURSE DURATION

The course will take place over 3 full training days (in-person, online or hybrid). Registration is done by completing the registration form.

COMPETENCY DEVELOPMENT

The final exam of the course takes place at the end of the second day and consists of a multiple-choice test with 50 questions.

Participants who pass the exam will receive a Certificate of Completion issued by ICI Bucharest, which includes Continuing Professional Development (CPD) credits and a descriptive supplement of the specific skills acquired, as well as membership in the Blockchain Intelligence Professionals Association (BIPA) invite-only expert group, involved in international projects and initiatives fostering cooperation between the public and private sectors.

Participants who did not pass the final exam of the course, or did not attend the exam, may retake it free of charge at a later examination session organized by ICI Bucharest for other course series, within a maximum of one year from the course completion date. After this period, participants are required to retake the course at their own expense.

PARTICIPATION FEE

For course fees and further details, please contact us by email. Details regarding the program's schedule and registration procedures can be obtained at the email address: office@ici.ro

ADDITIONAL INFORMATION:

About the ChainArgos blockchain intelligence software

ChainArgos is a blockchain intelligence company, recognized for uncovering the undercollateralization of $1.4 billion in stable crypto-assets (BUSD) on the global Binance platform.

ChainArgos offers advanced blockchain intelligence solutions focused on analyzing financial transaction details. These solutions facilitate investigations and economic analysis by providing objective insights into the logic behind complex transaction flows.

The company collaborates with financial institutions, regulators, law enforcement agencies, research institutes, universities, and crypto-asset service providers worldwide. ChainArgos is also supported by renowned media institutions such as Bloomberg, Wall Street Journal, Forbes, Fortune, Thomson Reuters, and South China Morning Post.

Participants in this training program will have access to the ChainArgos blockchain intelligence platform during the course and up to 15 days after its completion.

ChainArgos.com

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