Certification Examination Regulations and Course Discription

This Certification Examination Regulations of the Steinbeis+Academy
applies to the following course on the basis of the valid Framework for the Implementation of
Certificate Courses (RZLG) in the current version.

Course title	Blockchain				

Fields of competences	Management	Personality Development	Education Management	Healthcare	Technology
	X				X

Place(s) of implementation	Bengaluru (India)				

Graduation	Diploma of Advanced Studies (DAS)	Certificate of Advanced Studies (CAS)	Diploma of Basic Studies (DBS)	Certificate of Basic Studies (CBS)
				X

Qualification aim	Working professionals from Finance & Banking, Logistics, Cloud service, E-Commerce, Health & Pharma, Public & Govt Sector and Energy. Aspirant looks for career in Finance & Banking, E-commerce, Health & Pharma sectors etc. Entry level: Blockchain programming and technologies.

RZLG-Supplementary admission requirement	Aspirant should have a good knowledge of Information technologies, information security, and computer science.

Teaching method	Classroom	Classroom/ Online	Online
		X	

Language	English			

Workload in hours	Total	Seminar time	Self-study time	Transfer time
	40	25	10	5

Type of performance records (LNW)	Examination (K)	Presentation/ oral examination (P)	Case (C)	Transfer papaer (TA)	Project study paper (PSA)
	X				

Contents

Modules	Key topics	Seminar time/h
Introduction To Blockchain And Cryptocurrencies	History; Bitcoin or bitcoin (Do you know the difference)?; Centralized Ledgers; Decentralized Ledgers; Functions of currency; Distributed consensus; Consensus Mechanisms ex. POW, POS, DBTF (delegated Byzantine Fault Tolerance) etc.; Financial use cases; Non-Financial use cases; Price Derivation of Bitcoin and other Altcoins; Demo and Exercise	2
1st Generation Of Blockchain	Cryptography essentials; Hash functions ex. SHA256; Bitcoin Improvement Protocol ex. BIP 32; Merkel root; Address; Symmetric and Asymmetric Encryption; Digital signatures; Bitcoin Dictionary; Demo of Features; Lab session and Exercise	2
2nd Generation Of Blockchain	Transactions; Blockchain Ledger; Demo of Blockchain; Bitcoin units; The network; Bitcoin Improvement Proposals (BIPS); Community; Demo	2
3rd Generation Of Blockchain	Blockchain explorers; UXTOS; Bitcoin Mining; Algorithm; Mining pools; Hardware Wallets; Security and centralization; Lab session and Exercise	2
Future Trends In Blockchain	Wallet types; Bitcoin Clients; Deterministic wallets; Backups; Demo of Wallets ex.; Lab session and Exercise: Set up your Wallet	2

Bitcoins	Trade Bitcoins; Buy and sell Bitcoins; Invest; Hedging; Introduction to Altcoins ex. NEO; Lab session and Exercise	2
Excerises	Lab session and Exercise; Reality about Blockchain and How Blockchain works?; Blockchain Architecture and Platforms ex. BigChain DB, Corda, Ethereum etc.; DTL-Distributed ledger; Consensus Mechanisms ex. POW, POS, DBTF (delegated Byzantine Fault Tolerance) etc.; Real demo of Blockchain with a simple example; Distributed VS Decentralized network; Private and Public Blockchain; Consortium Blockchain; Permissioned and Permission less Blockchain; Public and Private Key creation; Storing Private and Public key; Mining; Genesis Block in Blockchain; Hard fork; Consensus Mechanism; 51% Attack theory; Exercise: Set up your Private Blockchain; Exercise: Blockchain use cases for Banking, Insurance etc.; Extra: How to design Blockchain Architecture, Blockchain use cases, Requirements Analysis etc.	2
Blockchain Architecture	Design the admins and user Interfaces of Blockchain. Examples Demonstration with HTML5, CSS, Solidity; Blockchain Architecture and Platforms ex. BigChainDB, Corda, Ethereum etc.	2
Introduction To Ethereum	Introduction to Ethereum; Basics of Ethereum; Introduction to Web 3 and Truffle; Introduction to smart contract; Components of smart contract; Exercise: Create and deploy Smart contract; Ethereum tools ex. Mist, Dapps and accounts; Ethereum Test Rpc; Introduction to solidity programming; Structure of Solidity contract; DApps and DAOs; Lab session and Excercise	2
Blockchain Platforms	Introduction to Blockchain platforms ex. Multi chain; Blockchain as a service (BAAS) on Microsoft Azure; Blockchain on AWS (Amazon web services); Blockchain on IBM Bluemix; Exercise: How to set up Private Blockchain on Multichain; Exercise: How to set up Private Blockchain on Amazon Web services	2

Blockchain Applications	Blockchain Ripple Framework; How to create Blockchain for real projects ex. KYC, Travel Insurance etc.; Blockchain API; Blockchain waves platform; Introduction to Monero; Introduction to next generation platform- IOTA; Introduction to IOTA and Tangle Architecture; Blockchain and Artificial Intelligence; Blockchain and Internet of Things; Exercise: How to Create AI Chatbot and deploy on Blockchain	3
Introduction To ICO	Exercise: How to Create AI Chatbot and deploy on Blockchain; How ICO is a new way of raising money; ICO regulations; How to issue your own ICO token?; How to launch an ICO platform?; ICO Strategic and Marketing techniques; Exercise: ICO	2