

M.Sc. in Computer Science with Specialization in Distributed Systems and Blockchain Technologies

The latest trend in computer technology is decentralization. Decentralization is achieved by splitting the complex tasks and distributing them to multiple computing resources. To remain significant in this trend, knowledge of distributed systems is a must for any computer engineer and software developer. Blockchain is the game changing distributed database technology to record the interactions in a modification resistant manner. The blockchain technology is being used successfully in financial transactions and information sharing. This well curated master's program in computer science with specialization in distributed systems and blockchain technology aims to prepare students to design and develop distributed systems, especially blockchain related solutions. This two-year program will start with the fundamental courses like data structure, programming, and mathematics and will finally cover advanced distributed systems and modern blockchain applications. In this course, students will get the option to work on real-life projects as interns in Kerala Blockchain Academy or other corporate organizations.

After successful completion of the degree, students may go for jobs in corporate and allied sectors, R&D organizations, government organizations, or they have the option for pursuing higher studies. Motivated students could think of starting their journey as successful entrepreneurs after finishing the program.

Kerala Blockchain Academy (KBA): KBA is a Centre of Excellence in Blockchain under DUK, started in 2017 as the first Blockchain institution in India under Government Sector with a vision of "Leveraging Blockchain technology for Public Good". KBA is a partner of many prestigious global blockchain foundations including Linux Foundation Hyperledger Project, R3 Consortium, Zilliqa Blockchain, Global Blockchain Education Network etc. which gives the students ample opportunities to explore the technology in multiple dimensions and build a promising career. With 17000+ alumni from more than 66 countries, KBA has a proven track record in the blockchain education domain for academia, corporates, and government. Beyond an academy, KBA possesses a strong project division known as Blockchain Garage, building funded projects and award-winning solutions from reputed organizations like Bill and Melinda Gates Foundation, BIRAC, US Consulate Chennai, NITI Aayog, etc. providing students with an opportunity to work on live projects and gain industry experience.

Curriculum

Semester 1		
Type of the Course	Title of the Course	Credits
University Core 1	Digital Experience Laboratory	4
University Core 2	Design Thinking and Innovation	3
Program Core 1	Mathematics for Computer Science	4
Program Core 2	Foundations of Blockchain Technologies	3
Program Core 3	Data Structures and Algorithms	4
Program Core 4	Distributed Computing Environments	3
Program Core 5	Python for Data Science	3
Program Core Lab 1	Foundation on Blockchain (Lab)	1
Program Core Lab 2	Python Programing Lab	1
Total Credits		26

Semester 2		
Type of the Course	Title of the Course	Credits
University Core 3	Digital Access for Community Empowerment	3
Program Core 6	Modern Cryptography	4
Program Core 7	Database Systems	3
Program Core 8	Operating Systems	3
Program Core 9	Public Private Blockchain	3
Program Elective 1		4
Program Core Lab 3	Database Lab	1
Program Core Lab 4	Public Private Blockchain Lab	1
Mini Project 1		1
Total Credits		23

Electives for Semester 2
Data Analytics
Information Retrieval
Cloud and Edge Computing
Cyber Analytics

Semester 2 Internship		
Type of the Course	Title of the Course	Credits
Internship	Summer Internship/Team Project	2
Total Credits		2

Semester 3		
Type of the Course	Title of the Course	Credits
Program Core 10	Distributed Ledger technology	3
Program Core 11	Advanced Distributed Systems	4
Program Elective 2		4
Program Elective 3		4
Program Elective 4		4
Program Core Lab 4	Distributed Ledger technology Lab	1
Program Core Lab 5	IoT Experience Lab	2
Mini Project 2		3
Total Credits		25

Electives for Semester 3
Machine Learning
Wireless Networks and Mobile Computing
Digital Currencies (Digital Assets Management/Digital Financial Systems)
Social Network Analytics and Security
Web Technology
Business innovation through Blockchain

Semester 4		
Type of the Course	Title of the Course	Credits
Internship/Project		24
Total Credits		24