upGrad | iiit-b International Institute of Information Technology Bangalore

ADVANCED CERTIFICATE PROGRAMME IN

BLOCKCHAIN

About upGrad

Ronnie Screwvala
Co-founder & Executive Chairman

upGrad

upGrad is an online education provider that enables individuals to develop their professional potential in the most engaging learning environment. Online education is a fundamental disruption to the traditional model and will be having a far-reaching impact. At upGrad, we work towards transforming this online education wave into a tsunami! We take a full stack approach, by leveraging content, technology, marketing and services, to offer quality education at scale in partnership with corporates and academia. This translates into rigorous industry relevant programs for individuals looking for a professional upgrade.

In the last 10 years, digital technology has had a profound impact on billions of lives and thousands of businesses in India and abroad. The pace of growth is only expected to increase further, as the $150 billion Indian IT the industry is set to double its revenue in the next 10 years. This growth will be driven by new age digital products and services, which will create millions of new developer jobs.

The program will prepare our learners to excel in this rapidly evolving technology landscape, by strengthening their core concepts.

"

Our aim is simple: We strive to create high-impact, on-campus hands-on experiences that prepare students for meaningful and productive careers".

Advanced Certificate Programme in Blockchain Development with IIITB

As an independent institution and a deemed university, IIITB collaborates with the IT industry, leading academic institutions abroad, eminent scientists and industry leaders to offer students the best possible education. Our outstanding faculty, curriculum and pedagogy ensures that our graduate programs are ranked among the best in the country. Our students have been well received by industry, and have been placed with some of the leading companies in the IT industry.

We have partnered with upGrad to offer a rigorous programs with a unique and exciting combination of development principles and industry-led hands-on experience. students will get opportunities to work on industry-relevant projects and interact with industry experts through upGrad's strong industry network. The program has been designed keeping in mind that the future belongs to professionals who can think and implement end-to-end.

Prof. Debabrata Das
Director - IIIT Bangalore

iiit-b | International Institute of Information Technology Bangalore

upGrad as a thought leader in emerging technologies

We have trained:

10K+
Data Scientists

5K+
Machine Learning
Engineers

2K+
Full Stack Developers

1.5K+
Big Data Analysts

1K+
Blockchain Developers

Program Highlights

Advanced Certificate Programme from IIITB

Differentiate yourself from your peers by earning the industry recognised Advanced Certificate Programme from IIIT Bangalore.

For the Industry, by the Industry

Learn and apply concepts on industry projects along with personalised industry mentorship.

360 Degree Career Assistancet

Receive 360 degree career support from access to upGrad's job opportunities portal, 1:1 profile reviews, career mentorship from industry experts and much more.

Personalised Mentorship

Get unparalleled personalised mentorship and doubt resolution from our panel of industry experts.

Dedicated Student Support Team & upGrad Buddy

To help resolve your non-academic queries and to ensure you are on track with upcoming deadlines.

Unparalleled Learning Experience

Learn the concepts from experienced faculty & understand the applications from Industry experts to get a blend of theoretical knowledge and practical-hands on experience.

Learn from Academy & Industry Experts

Aakash Bansal
Co-Founder, one0x

Jitender Bhutani
Blockchain Architect,
Syncrasy Tech

Kumar Nishant
Co-Founder and CTO,
Zubi Infotech Private Limited

Shebin John Samuel
Blockchain Advisory & Presales,
IBM

Ankur Daharwal
Blockchain Consultant,
AirCarbon Pte. Ltd.

Jaywardhan Sawale
Principal Engineer, koinearth

Prof. V. Sridhar
Faculty In Charge, CPE, IIITB

upGrad Learning Experience

Industry-relevant Curriculum

Designed and taught by best in class industry experts and IIIT Bangalore's faculty.

Blended Learning

Learn with the ease and flexibility of recorded sessions as well as live sessions, designed to ensure a wholesome learning experience

Discussion Forums

Learn from your peers and teaching assistants, and for timely doubt resolution.

Career Assistance

Access to upGrad's job opportunities portal, career mentorship, profile review and more.

Re-learn the Concepts

Get program access for upto 3 years to refresh your concepts

Hands-On Projects

Multiple case studies & assignments & a mini capstone project to choose from and apply learnings to it.
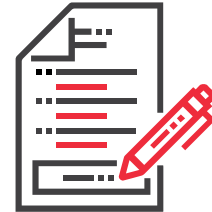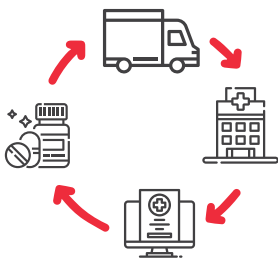
Industry
Projects

Bank KYC
Build a distributed KYC platform for banks on Ethereum network.

Property Registration System
Create the smart contract for a case study on 'Property Registration System' using Hyperledger Fabric.

Pharma Supply Chain
Build a blockchain solution for pharmaceutical supply chain management to tackle the issue of drug counterfeiting.

*projects are subject to updation upon university approva

Program
Curriculum

PRE-REQUISITES

- **JAVASCRIPT**   2 WEEKS

  In this module, you will be learning the basics of Javascript. Understand the syntax of the language ranging from basic to advanced concepts. Learn how to install Node JS on your system. Along with that, understand what are the different modules and packages available on Node

- **INTERNET & NETWORKING BASICS**

  Learn how different networking protocols work. Basic and essential protocols like TCP/IP, UDP, DNS, etc., is covered. Understand how the different components and features are visible in a network

  TOOLS COVERED: NODE

C1. BLOCKCHAIN: BASICS AND APPLICATIONS

- **NODE FUNDAMENTALS**   1 WEEK

  In this module, you will learn about the fundamentals of NodeJS

- **BLOCKCHAIN BASICS**   1 WEEK

  In this module, you will learn about Bitcoin and fundamentals of a blockchain network. Basic concepts like decentralized ledgers, architecture, consensus, transaction flow, etc., is taught using Bitcoin as a reference

- **BLOCKCHAIN FEATURES**   1 WEEK

  In this module, you will learn fundamental features of the blockchain network - immutability and transparency. You will also learn about different use cases, different type of blockchain and their use cases. You will be introduced to smart contracts as a concept

- **ETHEREUM FUNDAMENTALS**   1 WEEK

  As a part of this module, you will learn thebasics of ethereum, it's architecture and the different core concepts of it

- **SMART CONTRACT DEVELOPMENT IN ETHEREUM**   2 WEEKS

  In this module, you will learn basics of smart contracts and how to write them using Solidity. This module will also teach you frameworks like Truffle and how it is used. You will be able to set up your own private ethereum network. By the end of the module, you will learn how to deploy a smart contract on a test network like Ropsten

- **DAPP DEVELOPMENT IN ETHEREUM** — 1 WEEK

  You will learn about tokens, wallet creation and how to construct a distributed apppplication on ethereum as part of this module

- **ASSIGNMENT/PROJECT** — 1 WEEK

  As a part of this module, you will be building a Dapp on Ethereum. The Dapp will be for a Bank KYC system. You will learn how to create and deploy the whole project on your own using the concepts taught in the previous modules

  TOOLS COVERED: ETHEREUM, SOLIDITY, TRUFFLE, GANACHE, REMIX IDE, METAMASK, WALLETS & NODE

C2. BUILDING A DISTRIBUTED APPLICATION ON HYPERLEDGER FABRIC

- **HYPERLEDEGR FUNDAMENTALS** — 1 WEEK

  As part of this module, you will learn about Hyperledger and also about Hyperledger Fabric. You will learn the fundamental concepts, components, transaction flow and characteristics of the Hyperledger Fabric with the help of a simple case study

- **FABRIC NETWORK SETUP** — 2 WEEKS

  As part of this module, you will look at an existing problem in the industry for which blockchain could act as a solution. You will learn the different steps required to set up the Hyperledger Fabric network on your local system. You will then start the first step of the solution, which is to set up the network on your computers. You will learn about the different configuration files required to set up the network and their importance

- **CHAINCODE DEVELOPMENT** — 2 WEEKS

  As part of this module, you will first learn about the concept of chaincode. Then you will be looking at the chaincode for the problem statement discussed as part of the previous module. Next, you will deploy this chaincode on top of the network that was set up in the previous module. First, this deployment will be done in the 'dev' mode and then after making sure that all the logics are properly implemented, the chaincdoe will be deployed in 'production' mode. You will also learn how to automate the entire steps done till now using script files

- **DAPP DEVELOPMENT** — 1 WEEK

  As part of this module, you will be building a CLI based node applications to interact with the functions defined inside the smart contract. You will be learning about the Software Development Kit for Node.js provided by the Hyperledger Fabric community. You will learn about the different packages that are included in this SDK. Using these packages, you will then start building the node modules to interact with the functions defined inside the smart contracts. You will then test these modules using the Terminal

- **ASSIGNMENT/PROJECT**   **2 WEEKS**

  "The project is on building a blockchain solution for the supply chain managent. As part of the capstone project, you will first learn the problem statement that a blockchain solution will solve when applied to the supply chain. Post this, you will build a solution to tackle the issue of drug counterfeiting in a pharmaceutical supply chain

  TOOLS COVERED: HYPERLEDGER FABRIC, YAML, DOCKER, NODE & EXPRESS

Exam Week: Exam	1 WEEK

| Buffer Week | 1 WEEK |

C3. ARCHITECTING BLOCKCHAIN APPLICATIONS (DELIVERED LIVE)

- **UPSTAC COVID APP ARCHITECTING AND DEPLOYMENT**   **3 WEEKS**

  As a part of this module, you will be building an application on Health care management for Covid patients. You will learn how to create user stories, find out which blockchain framework to use and what will be the different tools to create the whole project. You will learn how to code and deploy the backend using smart contracts. Understand how the whole project works as a unit and deploy the solution on cloud. As a part of deployement, you will also be learning about Baas on AWS

- **ARCHITECTING A DEFI APPLICATION**   **2 WEEKS**

  In this module, you will learn about DeFi with a use case. You will learn how to create solution for the use case on Ethereum network. You will learn about some adhoc concepts like Network interoperability, ZKP, Light weight clients, etc

- **OTHER BLOCKCAHIN FRAMEWORKS AND THEIR USE CASES**   **1 WEEK**

  As a part of this module, you will be learning about a few more blockchain frameworks other than Ethereum and Hyperledger. You will have an introduction to networks like R3 Corda, Ripple, Iota, etc

- **ASSIGNMENT/PROJECT**   **1 WEEK**

  Course Assignment/Project

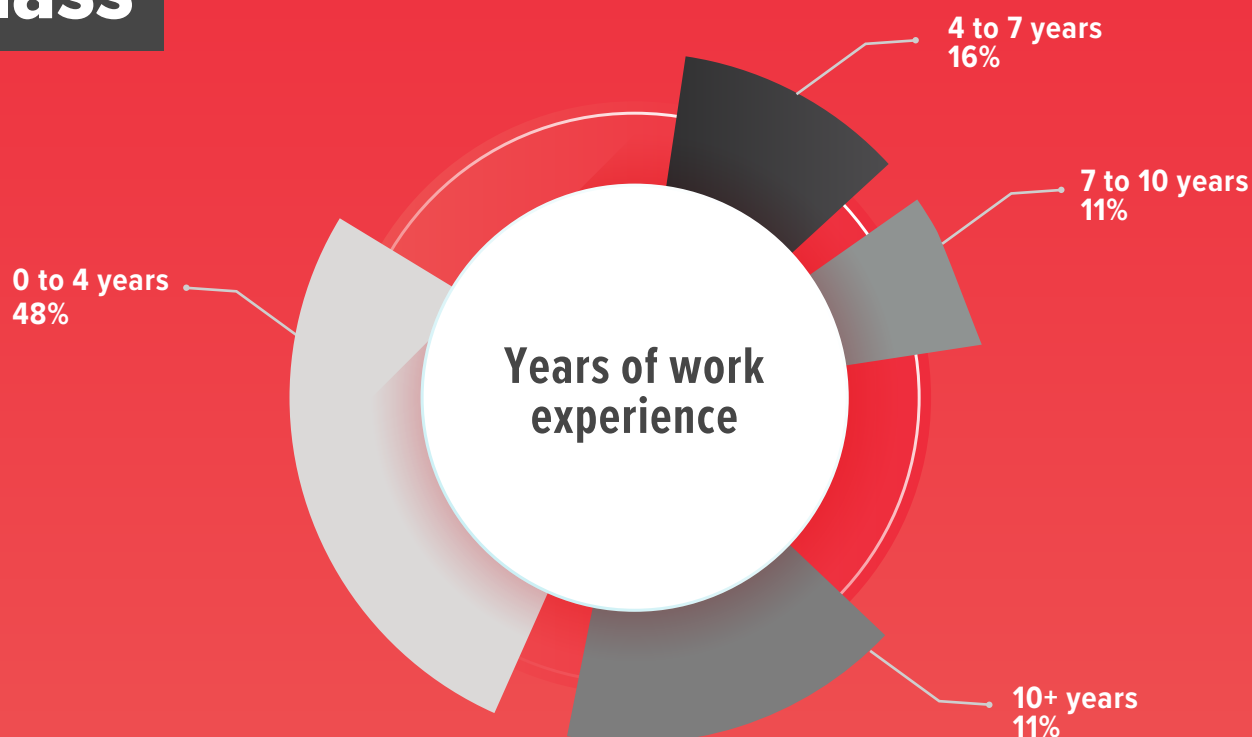| Exam Week: Exam	1 WEEK

Buffer Week	1 WEEK

C4. CAPSTONE

- **CAPSTONE PROJECT**   **4 WEEKS**
  Apply the concepts learnt till now in building an ICO/Crowdfunding platform

Meet the Class

Years of work experience

4 to 7 years
16%

7 to 10 years
11%

0 to 4 years
48%

10+ years
11%

Opportunity to network with our international learners

Europe
3.57%

China
3.57%

Africa
5.36%

South East Asia
7.14%

UAE
26.79%

Australia
7.14%

UK
19.64%

US
26.79%
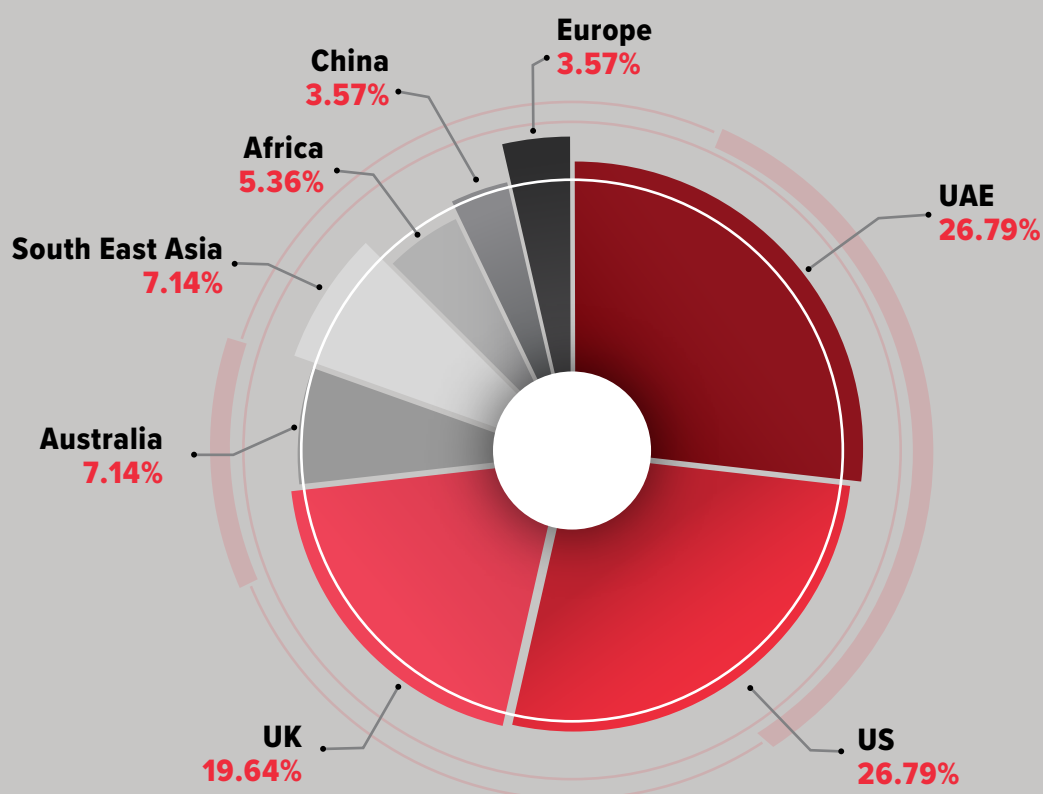
Hear from
our learners

Joel Varghese
Software Engineer,
Zoreum Blockchain Labs

The program has been very useful and my experience with upGrad and the student mentors at upGrad has been very good. The content taught is very relatable and the method of delivery is also convenient for working professionals like us "

Kriti Jain
Software Engineer,
Ministry of Defence

upGrad teaches complex topics in a very simple manner. The case studies are easily understandable and have added value to my resume and helped me bag a 125% salary hike. The curriculum is very relevant to today's market scenario and the upGrad team has done a good job in bringing education right at our palms "

Akshay Mathur
Software Technologist,
Philips

"The program has taught me a lot and the case studies have been very useful. The student mentors are very helpful and have helped me solve any and every problem that I have faced. It has been a great experience for me, I would definitely recommend the program to my friends. "

Kumar Shubham
SDET - II,
Blackbuck

"With upGrad, my experience has been wonderful. Managing work and studying has been the best decision of my life, thanks to upGrad. While it seemed difficult in the beginning, my student mentor helped me plan my schedule and manage time to maintain a work-life-study balance, which truly saved me! upGrad helped me gain a 60% salary hike "

Program Details & Admission Process

PROGRAM DURATION AND FORMAT
7.5 months | Online
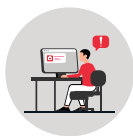
PROGRAM FEE
INR 99,000 (Incl. of all taxes)

PROGRAM START DATES
Please refer to the website for program start dates.

ELIGIBILITY
Bachelor's Degree with 50% or equivalent passing marks. No coding experience required.

WEEKLY COMMITMENT (12-15 hours/week)

6-7 HOURS
Asynchronous learning time.

6-7 HOURS
Assignments and projects.

SELECTION PROCESS

STEP 1: Selection Test

Fill out an application and take a short 20-minute online test with questions

STEP 2: Review and Shortlisting of Suitable Candidates

Our faculty will review all applications, consider the educational and professional background of an applicant and review the test scores wherever applicable. Following this, offer letters will be rolled out so you are assured a great peer group to learn and network with.

STEP 3: Enrollment for Access to Prep Content

Make a quick block payment & receive immediate access to the prep content and begin your upGrad journey.
(Loan assistance available if required)

FOR FURTHER INFORMATION, CONTACT
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