International Institute of Information Technology Bangalore

powered by

upGrad

Executive Post Graduate Certificate

Data Science & AI

Infused with GenAI

Duration 6-9 months

About IIITB

The International Institute of
Information Technology Bangalore (IIITB)

Established in 1998, IIITB is a premier institute known for its interdisciplinary approach, integrating technology with social sciences. Supported by the Government of Karnataka and the IT industry, IIITB fosters strong academic-industry partnerships and attracts top talent from across India and abroad through its merit-based selection process.

The institute has graduated over 3,500 students, many of whom work at leading IT companies globally. With a focus on research and development in fields like Artificial Intelligence (AI) and Machine Learning (ML), IIITB is recognised as a leader in AI education.

Ranked 74th in the Engineering category of the National Institutional Ranking Framework (NIRF) in 2022, IIITB continues to excel in education and research, making it a preferred destination for aspiring technologists and future leaders.

AICTE   **UGC**

ABOUT
upGrad

upGrad is redefining higher education by offering a dynamic, engaging platform that empowers individuals to unlock their potential. Partnering with prestigious universities such as Golden Gate University, Edgewood College, ESGCI International School of Management, Paris, Duke Corporate Education, Liverpool Business School, and Liverpool John Moores University, among others, upGrad delivers cutting-edge programs designed for today's busy professionals.

In a world where work and life demands often limit the pursuit of academic growth, upGrad offers a flexible, online learning experience that seamlessly integrates with your schedule. With over 20 million hours of learning delivered, the platform provides opportunities for career advancement without compromising your professional performance

GSV EDTECH 150
Top 150 Most Transformative Growth Companies

BRANDON HALL GOLD AWARDS
15+ Across 2 Years

PROMISING BRAND 2022
The Economic Times

EDUCATION COMPANY OF THE YEAR
VC Circle, 2022

Ronnie Screwvala
Co-founder & Executive Chairman

Current Industry Trends

50%

Increase in search volume for 'Data Science' since 2020

Source: Exploding Topics

36%

Increase in growth of Data Science jobs by 2031

Source: Harvard Extension School

$378.7B

Size of global Data Science market by 2030

Source: Milleniumpost

Program Highlights

Here are the top reasons why you should consider this program

Future-Ready Curriculum

Master In-Demand and Trending Competencies

Personalised Learning Experience

Learning Experience Tailored to Your Needs

In-Demand Tools

30+ Industry Tools, Languages, Libraries

Outcome-Driven Learning Experience

Personalised Portfolio-Building Support and Career Preparation Sessions

Best-in-Industry Experts

Decorated IIITB Faculty and Top Industry Practitioners

Golden Learning Ratio

Perfect Blend of Mathematics, Technology, and Business Understanding

Hands-on Learning

Solve 15+ Domain-Focused Assignments and Case Studies

Program Completion Certificate

Earn valuable credentials with an Executive Post Graduate Certificate in Data Science and Artificial Intelligence accredited with NAAC A+ (2021), and join.

Faculty

Dr. Debabrata Das
Director of IIITB
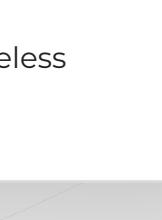
He has received his PhD from IIT-KGP. His main areas of research are IoT and Wireless Access Network.

**Prof. Chandrashekar Ramanathan**
Dean Academics, IIITB

Prof. Chandrashekar has a PhD from Mississippi State University and experience of over 10 years in several multinational organisations.

Prof. G. Srinivasaraghavan
Professor, IIITB
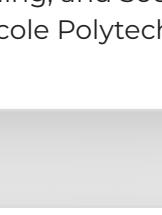
Prof. Srinivasaraghavan has a PhD in Computer Science from IIT-K and 18 years of experience with Infosys Technologies and several other companies.

Dr. Dinesh Babu Jayagopi
Professor, IIITB

Dr. Dinesh is currently an Associate Professor at IIIT-B where he heads the Multimodal Perception Lab. His research interests are in Audio-Visual Signal Processing, Machine Learning, and Social Computing. He obtained his doctorate from Ecole Polytechnic Federale Lausanne (EPFL), Switzerland.
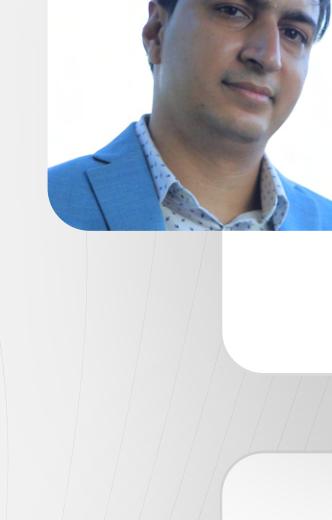
Chandrashekar Ramanathan
Professor & Dean (Academics)

Prof. Chandrashekar is a faculty member at IIIT-B since 2007 serving as professor, researcher and administrator. He has been working in the field of Computing for over 25 years in various capacities across industry and academia.
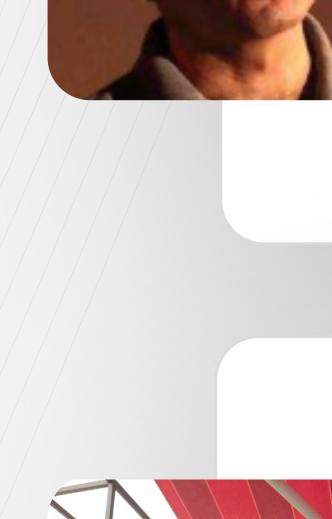
Tricha Anjali
Ex-Associate Dean
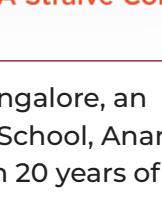
Prof. Anjali has a PhD from Georgia Institute of Technology as well as an integrated MTech (EE) from IIT Bombay.

Industry Experts

Abhishek Vijayvargia
Senior Data Scientist

Having worked with Microsoft as a Senior Data Scientist, he is an alumnus of IIT Kharagpur with 10+ years of experience in a Data Science domain

Microsoft
Ex-Senior Data Scientist

Anand
CEO

CEO, Gramener A gold medallist from IIM Bangalore, an alumnus of IIT Madras and London Business School, Anand is among the top 10 data scientists in India with 20 years of experience.

IIT MADRAS — Faculty | Infosys — Principal | BCG — Ex-Consultant

Sajan Kedia
Sr. Engineering manager

Senior Engineering Manager, Hotstar Sajan has extensive experience in the field of ML, Big Data, Data Science, and AI.

Disney+ hotstar — Sr. Engineering manager | Myntra — Machine Learning Engineer | IBM — Machine Learning Research Engineer

Mirza Rahim Baig
Startup Mentor

INDIA ACCELERATOR

Analytics Lead, Zalando Mirza is a veteran professional with 10+ years of experience in application of data science, machine learning in e-commerce and healthcare.
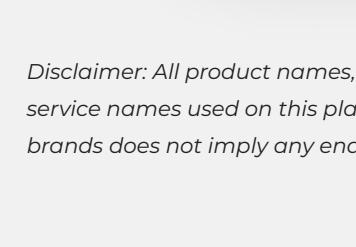
zalando — Team Lead - Product | NMIMS — Marketing Analytics | Flipkart — Ex-Analytics Lead

More than 30+ In-Demand
Industry Tools and Technologies

Python for Data Science

python™ ANACONDA jupyter CO NumPy pandas

matplotlib seaborn SciPy bokeh ChatGPT GitHub

Data Analytics and Business Intelligence

Excel MySQL Power BI tableau

mongoDB PostgreSQL

Cloud Computing, Big Data, Software Fundamentals

aws Google Cloud Azure FastAPI docker kubernetes
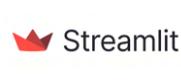
amazon EC2 amazon EMR PySpark databricks Flask Streamlit

Foundations of Machine Learning

statsmodels SciPy scikit learn

Deep Learning and Natural Language Processing

TensorFlow K Keras GENSIM topic modelling for humans NLTK

PyTorch spaCy

Assignments and Case Studies from
6+ In-Demand Business Domains

InfoSec
Feature Engineering
using Sklearn

**Media &
Entertainment**
Data Analysis using SQL

Transportation
EDA
using Python

Manufacturing
Regularisation using
Sklearn

Civil Engineering
Classification using
CNNs

BFSI
Sequence Data Prediction
using RNN

FMCG
Big Data Analysis
using Spark

Your Program Journey

Bootcamp
Math and Programming Bootcamp (12 weeks)

Curriculum
(25 weeks, 15 credits)
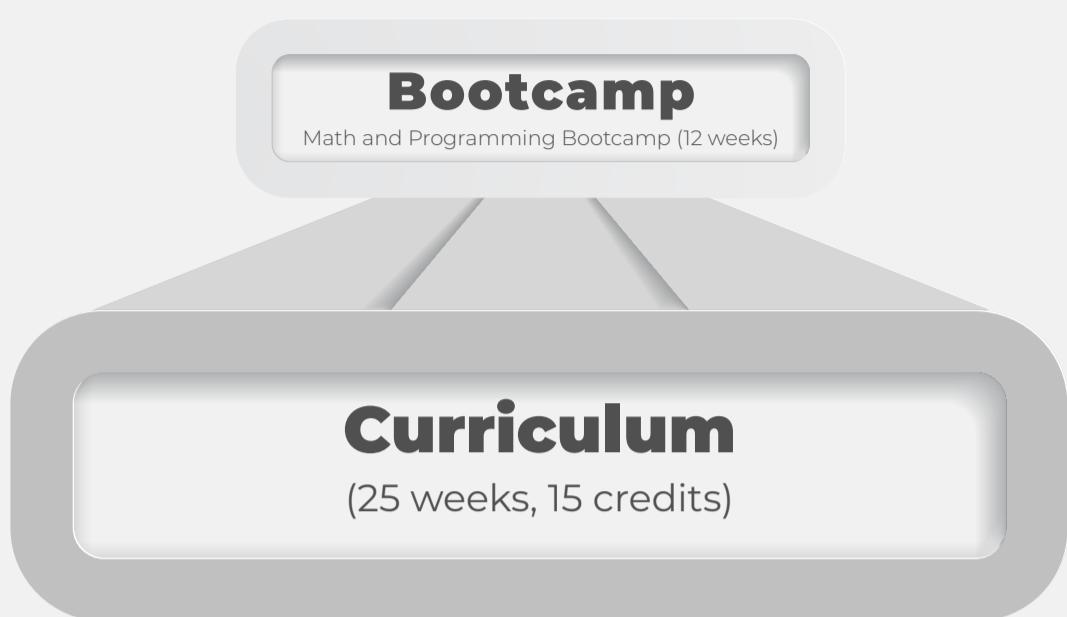
Applied Math and Programming Bootcamp

Personalise the initial 3 months of the program to your profile

Math and Programming
Profiling Test

**Pre-Test Phase
(2 Weeks)**

Test

**Skill
Profile**

approved

**6-Month
Program**

LMS expectation setting and
revision sessions

upskilling

**12-Week
Personalized Training**

Maths, Python, SQL
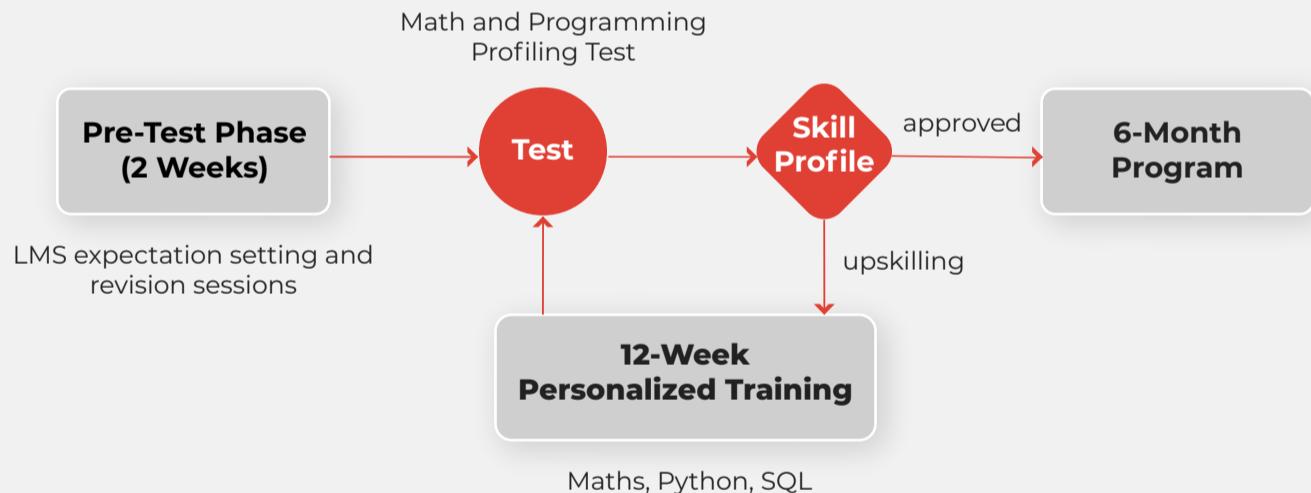
Topics: Sets, Combinatorics, Basics of Probability, Conditional Probability, Descriptive Statistics, Functions, Vector Algebra, Derivatives, Integrals, Coding Environments, Variables, Data Types, Syntax, Conditionals, Loops, Functions, Lists, Sets, Tuples, Dictionaries, Introduction to MySQL, Basic SQL Querying

Marks Structure: Total marks - 100

- Section A - **40 marks,** basic mathematics   Section B - **60 marks,** basic programming

- Passing marks - 25 marks in section A & 35 marks in section B

Unlimited attempts at the test and the bootcamp at no added cost!
We make sure that you are well-equipped to draw the most benefit from the program!

Curriculum

The curriculum will equip you with the most up-to-date and industry-relevant skills and technologies for data science and machine learning such as programming and mathematics, data analysis tools and techniques, cloud computing and big data analytics, and foundational topics in machine learning, deep learning, and natural language processing.

Topics

Advanced Mathematics for Data Science and Machine Learning
Master essential mathematical concepts to understand how to work with large amounts of data and train efficient machine learning models

- Conditional Probability and Probability Distributions
- Advanced Linear Algebra and Linear Transformations
- Multivariate Calculus

Advanced Programming for Data Science and Machine Learning
Wrangle real-world data using universal programming languages such as Python and SQL, and use GenAI for generating and debugging code faster

- GenAI for Coding and Problem-Solving
- Object-Oriented Programming
- Python Data Science Libraries
- Database Design and SQL Querying with MySQL
- Introduction to NoSQL Databases

Data Analysis and Exploration
Implement industry-standard statistical methods using tools such as Python, Tableau, and Power BI to analyse data and derive business insights

- Data Analysis with Python
- Exploratory Data Analysis
- Inferential Statistics and Hypothesis Testing
- Data Analysis and Visualisation with Power BI and Tableau

Cloud Computing and Big Data Fundamentals
Take your data processing and analysis workflows to the cloud and work with larger amounts of data to derive enterprise-scale business insights

- Cloud Computing with AWS, GCP, Microsoft Azure
- Big Data Analysis with PySpark

Foundations of Machine Learning
Train industry-standard machine learning models to automate insight generation and predict business metrics behaviour

- Machine Learning Paradigms
- Linear and Logistic Regression
- K Nearest Neighbors
- Regularisation and Hyperparameter Tuning
- Decision Trees and Ensembles
- Clustering Models

Deep Learning and Natural Language Processing
Build and train deep neural network models for different kinds of business data such as images and sequences

- Artificial Neural Networks
- Convolutional and Recurrent Neural Networks
- Lexical, Syntactic, and Semantic Processing

Deployment Fundamentals
Share and deploy your insights and machine learning models so that other collaborators can work with your contributions

- Containerisation and Deployment Tools
- Version Control

Projects

- **Querying with SQL**
  Analyse Spotify music data for targeted recommendations or NDAP insurance data for risk assessment

- **Exploratory Data Analysis**
  Analyse NYC taxi operations for efficient taxi positioning or US beer production data for better brewery operation management

- **Big Data Analysis**
  Analyse Mercari products data for better targeted recommendations or customer interaction data to enhance customer engagement
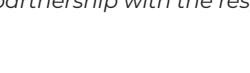
- **Linear Regression**
  Predict household energy consumption using appliance energy readings data to increase power consumption efficiency or parcel delivery time for Porter using historical delivery data for better planning and management

- **Deep Learning**
  Predict stock prices of Microsoft, Amazon, Google, IBM, using their historical stock price variations or temperature/pressure readings in Morocco using historical weather data

Build A Strong Portfolio

GitHub

Commits
Demonstrate consistency, collaboration, and coding discipline

Code
Showcase well-documented repositories

Projects
Host end-to-end DS/ML/AI projects that highlight real-world problem-solving

GitHub helps with

- ☑ Validating coding skills
- ☑ Showing growth and consistency
- ☑ Being interview-ready for Tech roles

kaggle

Kernels
Highlight data processing and EDA methodologies

Ranking
Evaluate and reflect global standing among data science practitioners

Competitions
Demonstrate problem-solving under tight constraints

Kaggle helps with

- ☑ Building credibility in data science circles
- ☑ Applying learning to real datasets
- ☑ Speaking confidently in Tech interviews

LinkedIn

Headline
Concise summary of goals, competencies, and professional identity

Summary
Engaging overview of learnin and career journey

Projects
Showcase practical experience, outcomes, and skill application

LinkedIn helps with

- ☑ Improving visibility with recruiters
- ☑ Positioning better for job openings
- ☑ Networking with peers and mentors in the field

Rich and Dedicated Live Support

Industry Expert Sessions
Engage with industry practitioners as they help you master in-demand skills and concepts using a demonstrative hands-on approach

IIITB Faculty Sessions
Learn from some of the most accomplished academicians as they take your knowledge and understanding of data science to another level

Personalised Industry Sessions
Participate in focussed sessions within a limited audience group as industry experts dive deeper into the industrial and business-related aspects of various advanced topics and technologies

Career Mentorship Sessions
Engage in personalised career mentorship connects with industry experts as they guide you on the best practices for your career future and even help you be better prepared via mock interviews

Daily doubt resolution sessions
Join doubt resolution session slots, that are available daily, and have an expert available to resolve your queries for a smooth learning journey

Meet the Class

INDUSTRIES OUR STUDENTS COME FROM

5% Healthcare

5% E-Commerce

1% Telecom

1% Finance

57% IT

15% Other

1% Consulting

1% Education

3% Retail

1% Manufacturing

10% BFSI

WORK EXPERIENCE

21% 3.1-6 years

15% 6.1-9 years

33% 0-3 years

11% 9.1-12 years

20% +12.1 years
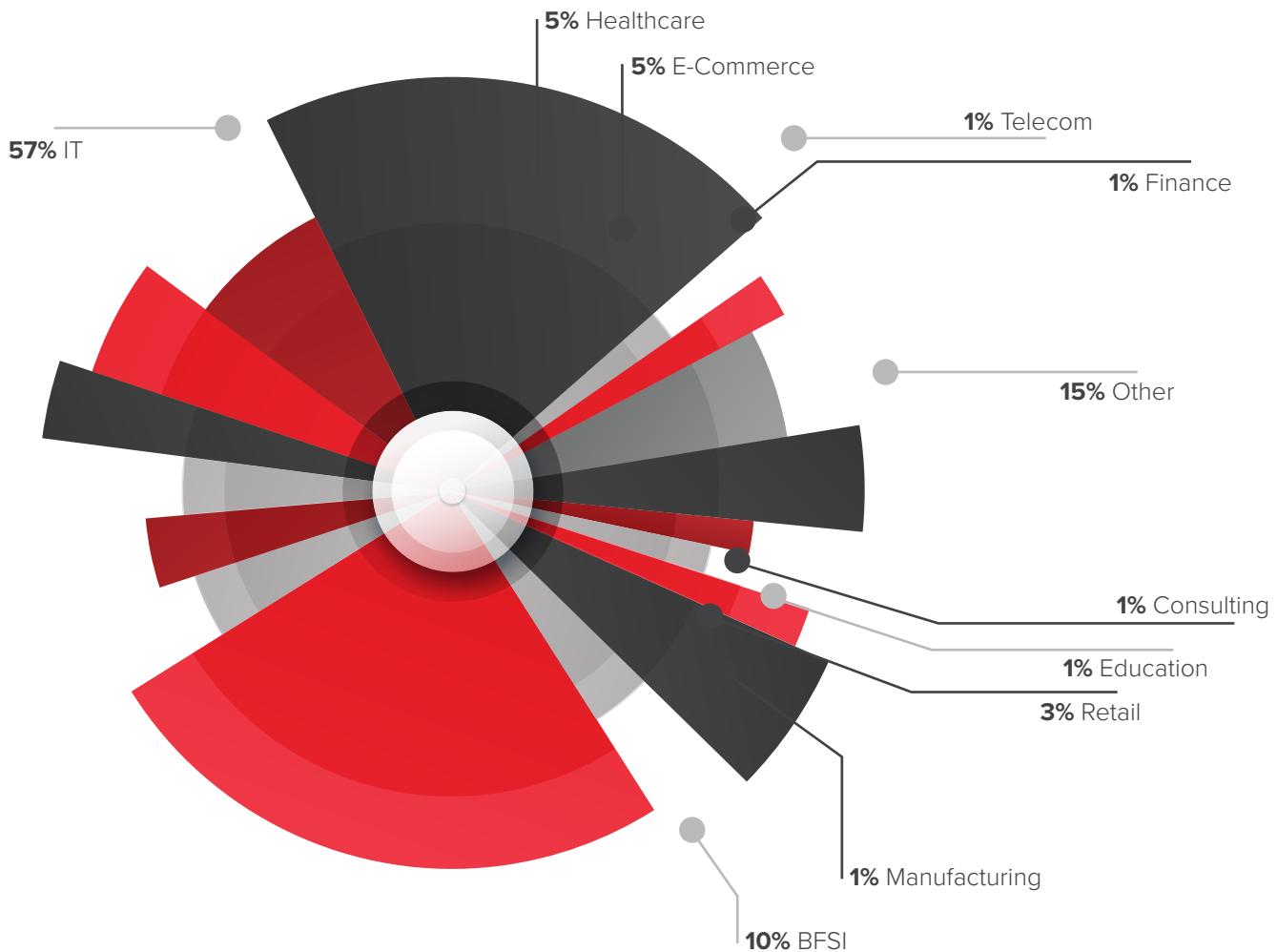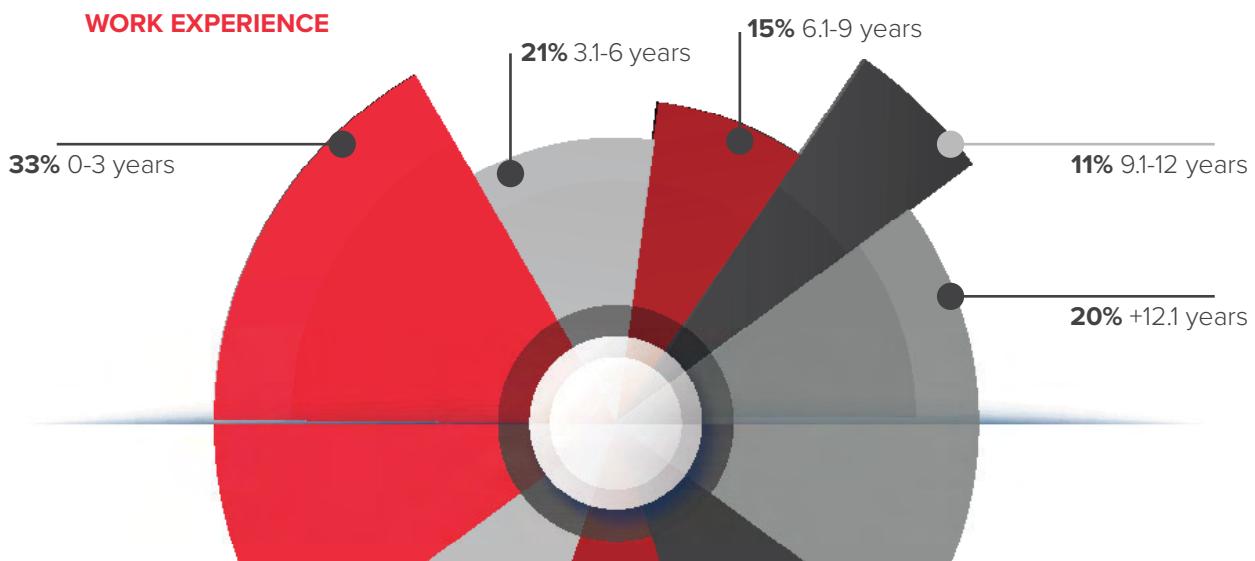
Option to articulate to a Master's degree
from Liverpool John Moores University

LJMU

Enrol in 4 small steps, Then take a giant leap.

STEP 1 — Submit Your Application

STEP 2 — Get Shortlisted

STEP 3 — Receive Your Offer

STEP 4 — Block Your Seat
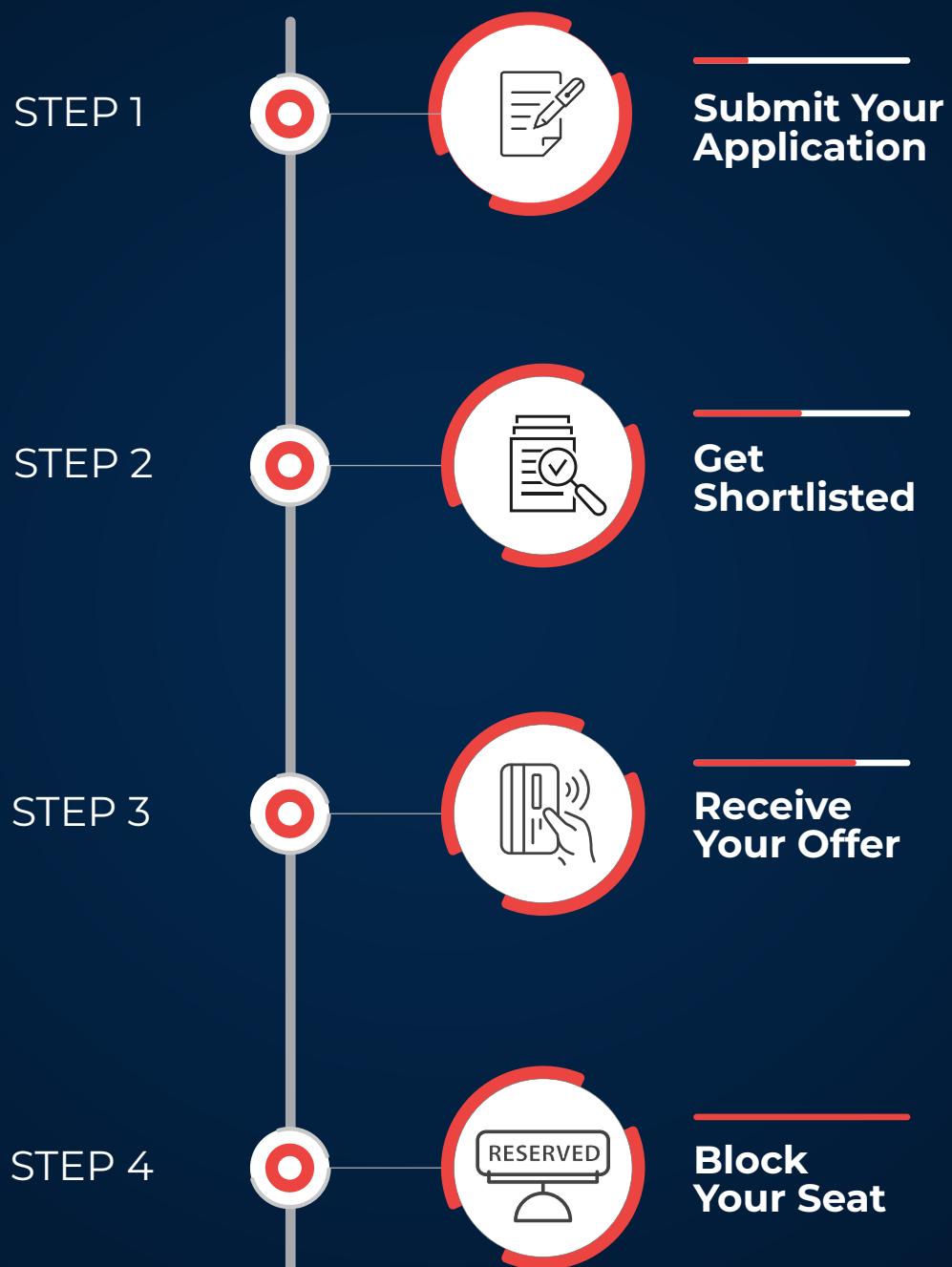
Eligibility Criteria

Bachelor's or Master's Degree or its equivalent in any discipline with minimum 50% aggregate mark or equivalent CGPA.

Technology Service Partner

upGrad

🔍 upgrad.com

For further details, **contact -**

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