

# Data Science for Business Decisions



## Hear From the Director's Desk



In response to the rising demand for professionals skilled in data science and translating it into valuable business insights within today's data-driven world, the Indian Institute of Management Kozhikode has meticulously crafted the Professional Certificate Programme in Data Science for Business Decisions. IIM Kozhikode programmes designed by world-class faculty with their cutting-edge thought leadership and industry-leading insights empower participants to manage and lead complex business challenges with confidence and data-driven, informed decision-making ability. Our growing global footprints acknowledged and accredited by leading institutions of the world are a testimony to growth we have achieved in our nearly 27-year journey of academic excellence.

At this juncture, it is also pertinent to share that both future and past are integral to the path taken by an institution on this journey of excellence. Having a wide, far-seeing vision is not an indulgence but an activity that is necessary to give meaning to our present, to give this Institution a sense of purpose, direction and imagination. That is why we have chosen to think in terms of what IIM Kozhikode will be able to contribute to India and the world some three decades from now with 'Vision 2047: Globalizing Indian Thought'. The Institute has set for itself a pre-eminent role with the above motto. The sheer scale, scope and potential impact that India will have on 21st-century business makes us believe that this is a legitimate aspiration.

Attain the ideal synergy of big data analytics and data science proficiencies through the pursuit of the Professional Certificate Programme in Data Science for Business Decisions by IIM Kozhikode.

**Prof. Debashis Chatterjee**

A handwritten signature of Debashis Chatterjee in blue ink, written in a cursive style.

**Director IIM Kozhikode**







**97.2% of organizations are investing in big data and AI.**

*\*TechJury*

**95% of businesses cite the need to manage unstructured data as a problem for their business.**

*\*Forbes*

**By 2026, 20% of top data science teams will have rebranded as Cognitive Science or Science consultancies, increasing diversity in staff skills by 800%.**

*\*Gartner*

**The big data analytics market is set to reach \$103 billion by 2023.**

*\*TechJury*





# Projected Salary Growth: Data & Analytics Professionals by Roles

## Median Salary of Data & Analytics professionals by roles



Median salary in INR lakhs per annum



## Overview

The field of data science has experienced remarkable growth, with a staggering 650% increase since 2012, and it is projected to reach \$230.80 billion by 2026 as per the recent report. This expansion has created abundant career opportunities and a rising demand for skilled professionals. Organizations worldwide are recognizing the potential of data in transforming their operations and staying competitive. Data-driven decision-making has become indispensable for companies striving for growth. Data science involves analyzing structured and unstructured data using statistics, algorithms, and technology. It combines data management and analytics to enhance business performance. Professionals in this field employ various tools and techniques to identify patterns, predict key performance measures, and shape business strategies.

The IIM Kozhikode Professional Certificate Programme in Data Science for Business Decisions equips participants with a comprehensive understanding of data science's role in driving business success, focusing on practical applications across diverse domains rather than solely on programming skills. This strategically designed programme provides in-depth knowledge and essential skill sets to the participants using the interactive curriculum, case-based teaching methods, and real applications across different business domains. The programme offers a deep dive into the concept of supervised and unsupervised learning techniques, understanding of social media analytics and big data technologies among others using different software tools and programming environment. It emphasizes gaining a holistic understanding of data science and its applications in business and management rather than on the programming/coding aspects.





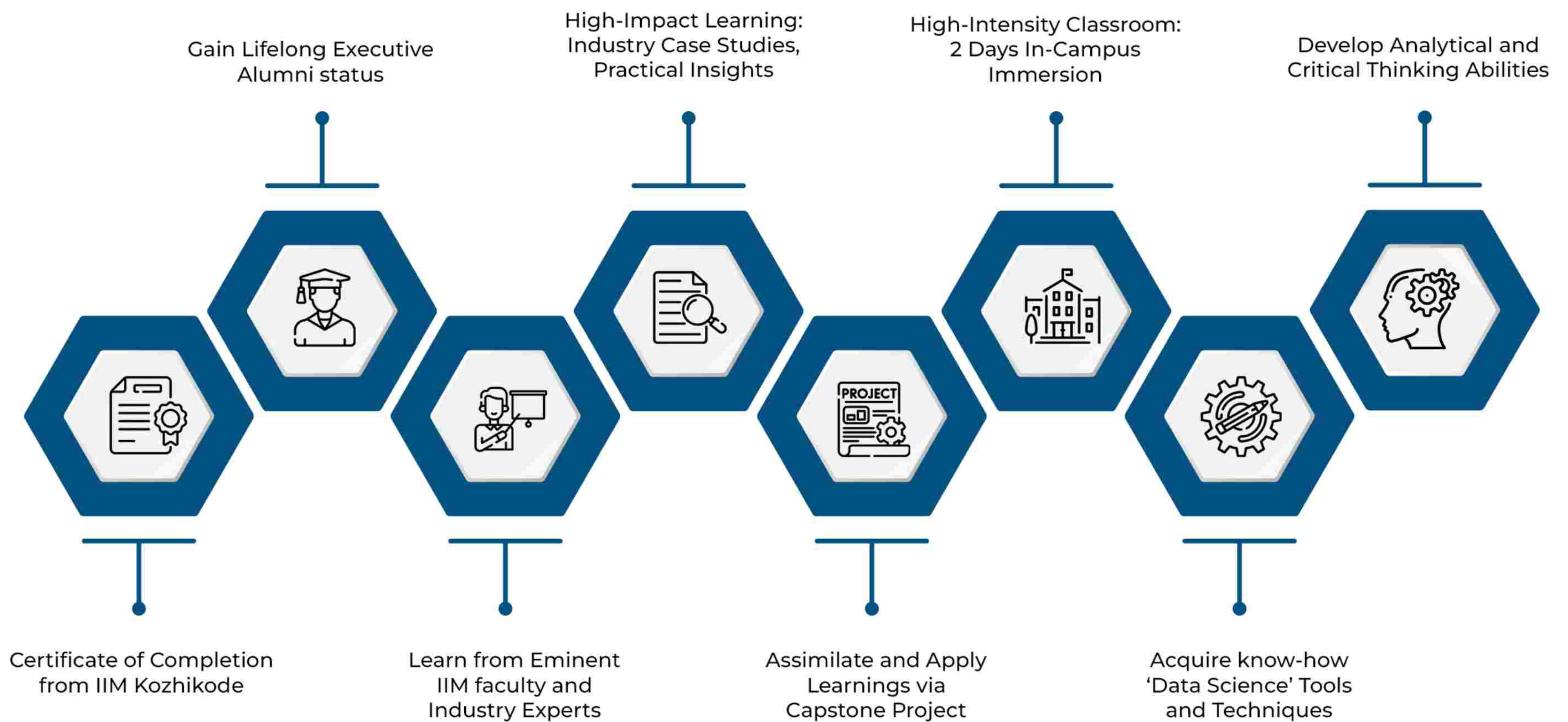
# Who should attend this intake?

- ▶ Tech professionals at all levels looking to upskill in Data Science or transition to a Data Science career.
- ▶ Mid-level managers/Business analysts/Domain specialists managing Data Science projects.
- ▶ Early managers/team leads with a basic exposure to Data Science looking to transition to Data Science career.
- ▶ Senior executives with a wide range of professional backgrounds looking for a holistic understanding of Data Science.
- ▶ Having familiarity with Mathematics/Statistics/any programming language will be beneficial to the participants. The program may not suit to applicants expecting to learn coding and get a hands-on technical learning on any Big Data Technologies





## Programme Highlights



## Learning Outcomes

- Holistic understanding of Data Science – why, when and how to use it in a business context
- Developing problem solving and critical thinking abilities through the lens of Data Science
- Translating business problems into data-driven problems
- Understanding the importance of data and its management
- Selecting appropriate data science tool(s) and technique(s) for a variety of business problems
- Interpreting the results from a managerial perspective and communicating to the stakeholders



## ➤ Module: 1 Data Management

- Data sources, Database
- Structured vs Unstructured data
- Data extraction/acquisition, storing, integration
- Data pre-processing
- Big Data

## ➤ Module: 2 Data Science Tools

- R, Python
- Tableau

## ➤ Module: 3 Descriptive Analytics, Data Visualization and Story Telling

- Exploratory data analysis (Summary measures, Visualizations, Probability and Distribution)
- Confirmatory data analysis (Statistical Inference)
- Unsupervised Learning Technique (Clustering and Dimension Reduction)

## ➤ Module: 4 Predictive Analytics: Statistical Learning and Machine Learning

- Regression and Classification (Statistical Learning)
- ML Techniques: CART, Ensemble Techniques (Bagging, Boosting, Random Forest), SVM
- Time series forecasting techniques

## ➤ Module: 5 Prescriptive Analytics and Deep Learning

- Optimization technique
- Artificial neural network (ANN)
- RNN, CNN

## ➤ Module: 6 Text Analytics and Natural Language Processing

- Web scraping
- Text mining
- NLP tools and techniques (Gephi, NodeXL)

## ➤ Module: 7 Big Data Analytics

- Information Value chain and Big Data characteristics
- Data Supply Chain: Data Architecture approaches under Traditional and Big Data landscape
- Data Monetization, Big Data Business Value Discovery, Big Data economy and business value
- Big Data applications (Industry, X Industry)
- Big Data tools – Hadoop, Apache Spark, HBase, Cassandra, MapReduce, Hive



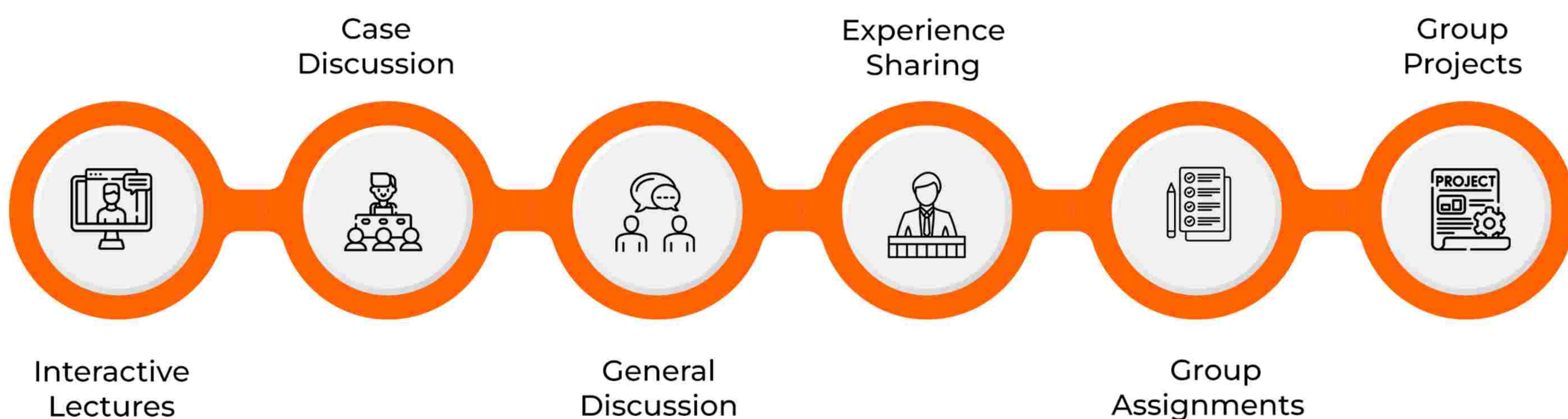
## ➤ Module: 8 Data Science Application in Business Management

- Marketing and Retail Analytics (Customer lifetime value, Market Basket Analysis, Customer attrition)
- Financial Analytics (Fraud analytics, Portfolio Management)
- Operations and Supply Chain Analytics (Demand Forecasting, Network optimization)
- HR Analytics (Employee churn)
- Healthcare Analytics
- Analytics in Government

**Note:**

- The above list is indicative and is subject to IIM Kozhikode's discretion.
- The content provided in every module provides a brief summary. The detailed course handout will be provided upon request.

### Pedagogy



### Explore Tools and Technologies Covered





# Programme Details

Mode of Delivery: Direct to Device [D2D]

Duration: 1 Year

120 Hours (40 Sessions)

2 Days In Campus Immersion at IIM Kozhikode

## Schedule

Session Timings: Saturday, 6:00 pm to 9:00 pm

Application Closure Date: Closing Soon

Commencement Date: 2nd December 2023





## Admission Criteria →

- Selections will be based on candidates' profiling.

## Eligibility Criteria →

- For Indian Participants - Graduates (10+2+3) or Diploma Holders (only 10+2+3) from a recognized university (UGC/AICTE/DEC/AIU/State Government/ recognized international universities) in any discipline.
- Minimum of 3 years of work experience (after graduation) as on the programme date i.e. technical orientation date.

## Assessment & Evaluation →

- The evaluation methodology is at the discretion of the faculty. The methodology includes online quizzes, case analysis, class contribution, assignments, and any other component as decided by the faculty. A minimum of 75% attendance is a prerequisite for the successful completion of this programme. The participants will have to secure the minimum pass marks in the evaluation components specified by the faculty.
- Participants who successfully complete the same and satisfy the requisite attendance criteria will be awarded a 'Certificate of Completion'. Participants who are unable to clear the evaluation criteria but have the requisite attendance will be awarded a 'Participation Certificate'.
- The programme may require participants to work on individual/group assignments and/or projects. The main objective of such assignments/projects will be to help the participants apply their conceptual learning of the programme to actual organizational decision scenarios.





Programme Fees Details

Particulars	Total Fee Amount (INR)
Application Fees	2000/- + GST
Total Fees (excluding Application fees)	2,00,000/- + GST

Instalment Pattern	
Particulars	Total Fee Amount (INR)
Booking Amount	80,000 + GST as per the date mentioned in the offer letter
Instalment 1	60,000/- + GST
Instalment 2	60,000/- + GST

Easy EMI Options Available





## Certificate

- Participants who successfully meet the evaluation criteria and satisfy the requisite attendance criteria will be awarded a 'Certification of Completion'.
- Participants who are unable to clear the evaluation criteria but have requisite attendance will be awarded a 'Participation Certificate'.
- “Professional Certificate Programme in Data Science for Business Decisions” Certificate will be provided by IIM Kozhikode.







### **Prof. Shovan Chowdhury**

Professor in Quantitative Methods  
and Operations Management Area, IIM Kozhikode

Professor Shovan Chowdhury has over twenty years of experience in teaching, research, training and consulting in the areas of Applied Statistics and Data Analytics. He received his Ph.D. in Statistics from the University of Calcutta. Prof. Chowdhury, recipient of Emerald Literati Awards 2019 and trained in Harvard Business School has published several research articles in leading international peer-reviewed journals. He is the co-author of the books titled 'Applied Statistics in Business and Economics' and 'Forecasting and Predictive Analytics' by a leading international publisher. He has conducted executive education and management development programs in business analytics, marketing analytics and healthcare analytics for more than 5000 management executives at different levels.



## Know The Facilitators



**Prof. Ram Kumar P.N**

Professor,  
Quantitative Methods and Operations Management Area,  
IIM Kozhikode



**Prof. Satish Krishnan**

Chair Associate Professor,  
Information Systems, IIM Kozhikode



**Prof. Sandip Barui**

Assistant Professor (Grade I),  
Quantitative Methods and Operations Management Area,  
IIM Kozhikode



**Prof. Vidushi Pandey**

Assistant Professor (Grade I),  
Information Systems, IIM Kozhikode



## About IIM Kozhikode



Started in 1997 with its Post Graduate Programme (PGP), the Indian Institute of Management Kozhikode (IIMK) is on a high growth trajectory today, offering the widest range of academic programs in the field of management education. These include Fellow Programme in Management, Executive PG Programmes, Management Development Programmes and Faculty Development Programs. IIMK set up a Satellite campus at Infopark, Kochi, in 2013 dedicated to Executive Education. IIMK also has the unique distinction of launching a PhD (Practice Track) programme for working professionals besides bringing in new dynamic courses like the one-year Post Graduate Programme in Business Leadership (2019) MBA in Finance and MBA in Liberal Studies & Management (2020). The institute is also home to IIMK LIVE a first-of-its-kind startup incubation programme and the Indian Business Museum.

IIMK is ranked 3rd as per NIRF India Rankings 2023: Management. The institute also features regularly among top global institutes for its flagship MBA (PGP) and EMBA programme (EPGP) in QS World University Rankings. The Institute has leapfrogged 100 spots to be placed in the Top 251-300 Institutes in Business & Management Studies globally, as per the QS World University Rankings by Subject 2023. It is also Ranked No.2 in CFIs (non-Technical) category in the Atal Innovation Rankings (ARIIA 2021) rankings released recently by Ministry of Education, Govt. of India, and has the distinction of being the only IIM in the coveted innovation rankings. IIM Kozhikode is globally accredited by EQUIS (EFMD) and AMBA (UK).

IIM Kozhikode also made its debut in the prestigious Financial Times Rankings (FT Rankings 2023) at 72nd position among the top-75 Open-enrolment executive program providers globally, catapulting the 27-year young IIM to an exclusive list of foremost providers of executive education in the world. IIM Kozhikode has successfully delivered close to 1300 MDP programmes for the past two decades, training more than 41000 participants from 150+ organisations - which also includes several Fortune 500 companies - in the process.





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**2022**  
EdTech Leadership Award



**2022**  
National Best Employer Accolade



**2019**  
Economic Times Award



**2018**  
ABP Education Award



**2017**  
Modi Award

Jaro Education is India's most trusted online higher education company. The Edtech firm, a pioneer in the executive education industry, was founded in 2009 by Dr Sanjay Salunkhe and has been profit-making since its inception and is self-funded. The company has been awarded the Edtech leadership award and the National best employer accolade by World HRD Congress in March 2022. The company aims to nurture entrepreneurs & working professionals from entry-level to C-Suite level in every field and industry by offering executive education programs that cater to their requirements.

**Schedule a call with our admission representative today**

**Mr Karthik**



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### **Jaro Education's Presence**

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