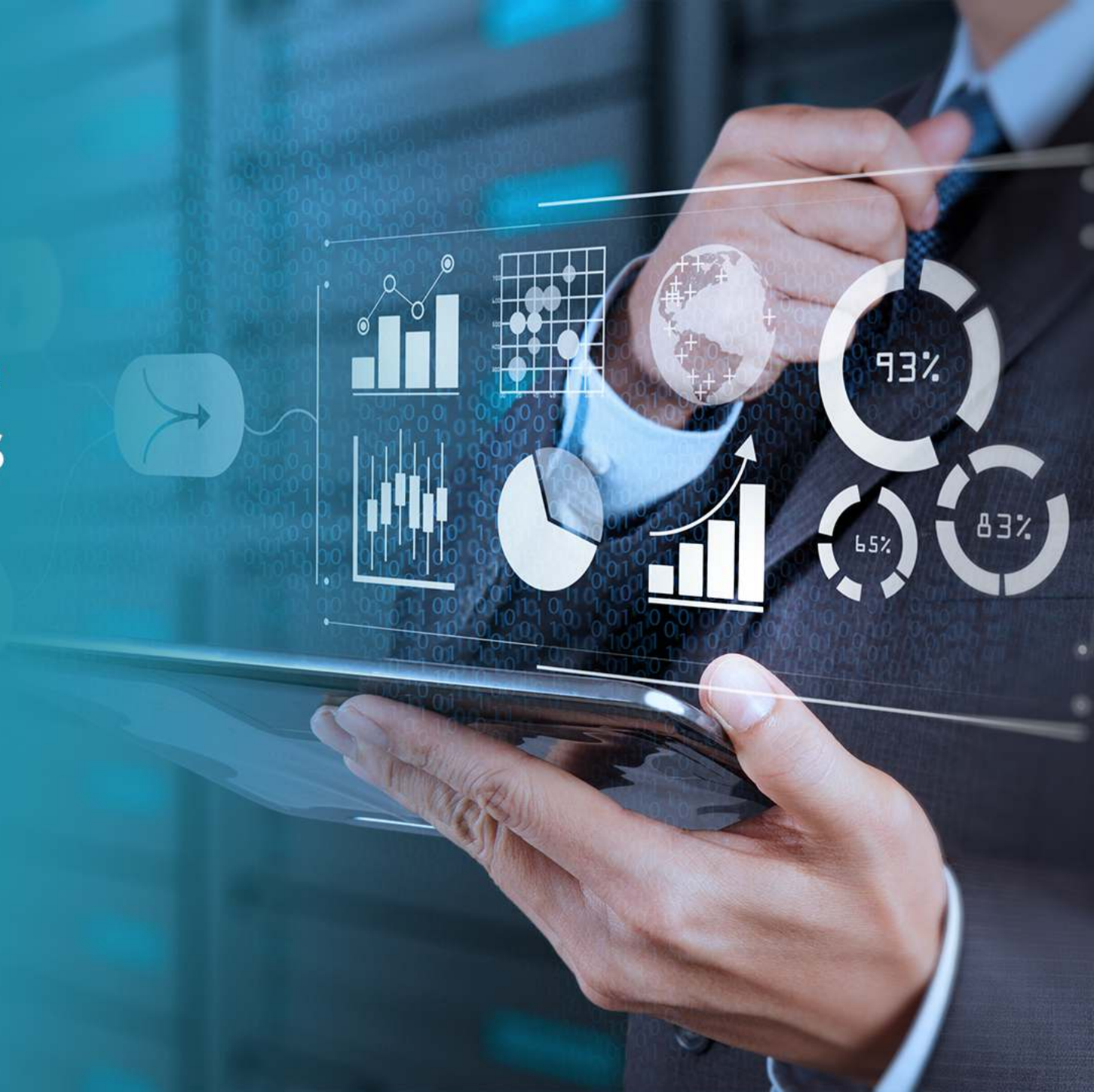
NITIE
National Institute of Industrial Engineering

jaro education

Global Online Certification Course on

Reinventing Business Operations with Data Analytics - 2023



Course Instructed by world-renowned scientist

Prof. David Simchi-Levi

MIT Professor - Business & Supply Chain Analytics,

Director - Data Science Lab,

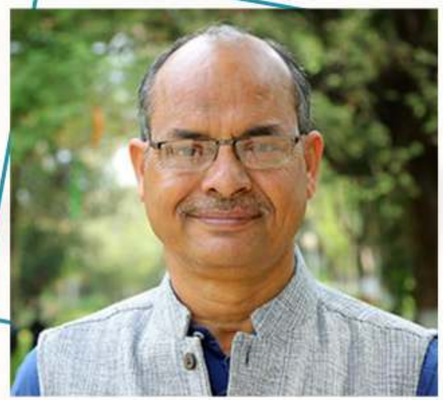
Massachusetts Institute of Technology, USA

Prof. David Simchi-Levi is the most renowned Professor and Thought Leader in the field of Supply Chain Management and also serves as the Editor-in-Chief of Management Science. He is the recipient of the prestigious INFORMS Impact Prize 2020 for his work on Supply Chain Resilience. His book, "Designing and Managing the Supply Chain" (with P. Kaminsky and E. Simchi-Levi) is a staple across B-schools for their Supply Chain Management courses.

He is the founder and chairman of LogicTools which provides software solutions and professional services for supply chain optimization. The company has provided decision support systems to clients such as Caterpillar, ConAgra, Kraft Foods, Mercer Management, Ryder, SC Johnson, UPS, U.S. Postal Service, Walgreens, etc. and was acquired by IBM.

Prof. David Simchi-Levi had associated with NITIE for the Global Online Certification Courses on Supply Chain Digitization and Management as well as Business & Operations Analytics, which were highly successful courses with over 2500 participants from all over the world in each course.

Chief Patron



Prof. Manoj K. Tiwari

Director, NITIE Mumbai

Prof. Manoj Kumar Tiwari (FNAE, FNASc, FIIIE, FIISE, and FIETI) is Director, National Institute of Industrial Engineering (NITIE) Mumbai from November 2019. He was a Professor with Higher Academic Grade (HAG) in the Department of Industrial and Systems Engineering at Indian Institute of Technology, Kharagpur and currently on lien for five years. As a researcher, he is working in the domain of Manufacturing System and Supply Chain Management. His research and teaching interests are in modeling the Manufacturing Processes and Operations analysis in Supply Chain Networks. Optimization, Simulation and Computational Intelligence are the main techniques adopted by Prof. Tiwari to automate the decision support system for complex and large-scale problems in Manufacturing and Logistics System.

He is the Recipient of Mahalanobis Distinguished Educator Award from the Operations Research Society of India (ORSI), in the category of Management education (2017). He is listed among Top 20 most productive authors in the area of Production and Operations Management as reported in the last 50 years (Published in a survey article in Int. Journal of Production Economics, 2009, 120, 540-551) and rated 2nd among many researchers working in Logistics and Supply Chain Management in India (Analysis of the logistics Research in India-White paper published in TU Dortmund University, Dortmund Germany-2012).

Overview

Business Analytics refers to the ways in which enterprises such as businesses, non-profits, and Governments can use data and analytics to gain insights and make better decisions. Business analytics is applied in operations, marketing, finance, and strategic planning, among other functions. The ability to use data effectively to drive rapid, precise and profitable decisions has been a critical strategic advantage for companies as diverse as Walmart, Google, Nike, Capital One, and Disney.

For example, Capital One uses sophisticated analytic capabilities to match credit card offerings to customers more accurately than their competition. WalMart uses data and analytics to monitor and update its inventory in a way that allows it to serve its customers at an exceptionally low cost. In addition, many current and recent start-ups, such as Palantir and Splunk are based on the application of analytics to large databases.

With the increasing availability of broad and deep sources of information — so-called "Big Data" — using this abundance of data to make better business decisions is becoming an even more critical capability for enterprises of all types and sizes. In this course, you will learn to identify, evaluate, and capture business analytics opportunities that create value. Towards this end, you will learn basic analytics methods and analyze case studies that describe organizations that successfully deployed these techniques.

NITIE Global Online Certification Course on Reinventing Business Operations with Data Analytics - 2023 aims to broaden professionals' business analytics know-how and skills. You'll learn to identify, evaluate, and capture business analytics opportunities that create value.

In the first part of the course, we focus on the use of optimization to support decision-making in the presence of a large number of alternatives and business constraints. In the second part of the course, we focus on how to use data to develop insights and predictive capabilities via machine learning, data mining and forecasting techniques. Finally, throughout the course, we explore the challenges that can arise in implementing analytical approaches within an organization.

The course emphasizes that business analytics is not a theoretical discipline: these techniques are only interesting and important to the extent that they can be used to provide real insights and improve the speed, reliability and quality of decisions. The concepts learned in this class should help you identify opportunities in which business analytics can be used to improve performance and support important decisions. It should alert you to the ways that analytics can be used — and misused — within an organization.

We have three goals in this course. The first is to help you think critically about data and the analyses based on those data — whether conducted by you or someone else. The second is to enable you to identify opportunities for creating value using business analytics. The third is to help you estimate the value created using business analytics to address an opportunity.

Business analytics is an integral part of modern management — this course should provide you with the foundation you need to understand and apply these methods to drive value.

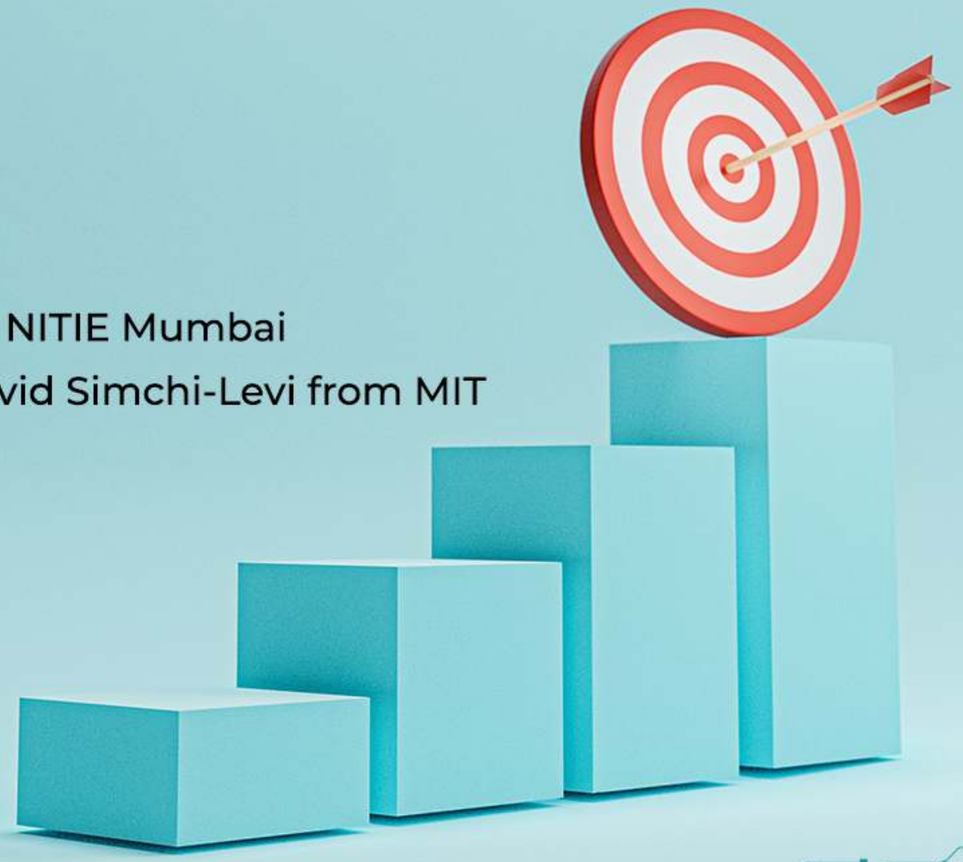
> **The global big data and business analytics market size are projected to reach $684.12 billion by 2030.**

Core Focus

1. The Journey for Data Driven Transformation
2. Optimizing Complex Decisions
3. Machine Learning Techniques
4. Model selection and integration of techniques

Program Highlights

- Live classes by highly experienced faculty member of MIT, USA & NITIE Mumbai
- Participants will get the opportunity to interact live with Prof. David Simchi-Levi from MIT
- Learn without a career break
- Highly recognised Certificate of Completion from NITIE
- The program covers aspects from data to business decisions



Course Content

Week 1: Introduction to Business Analytics

- Course Overview
- Introduction to Business Analytics
- Digital Transformation

Week 2: Prescriptive Analytics

- Optimizing Complex Decisions
- Linear Programming Formulation
- Demonstration of the Spreadsheet Optimization Method
- Shadow Price
- Sensitivity Analysis

Week 3: Predictive Analytics

- Linear Regression
- Logistic Regression
- Classification & Regression Trees
- K-Nearest Neighbour
- K-Means Clustering
- Bayesian Analysis
- Error Types

Week 4: Integrated Analytics

- Neural Network
- Variable Selection Techniques
- Categorial Variables
- Model Selection
- Integration of Techniques

Week 5: Case Study-I

- Case study: Supply Chain
- Unified View of Demand
- Supply Chain Segmentation
- Smart Planning & Execution
- Supply Chain Resiliency

Week 6: Case Study-II

- Case study: Pricing
- Online and Offline Retailer examples
- Estimating Lost Sales
- Price Elasticity of Demand
- Error Estimates
- Pricing Decisions
- Course Summary

Fees

For Individual Registration

Category	Fee Category	Amount
For Indian Participants	Student	INR 8000/- per participant
	Academician/Faculty	INR 18,000/- per participant
	NITIE Alumni	INR 22,000/- per participant
	Industry Professionals /Others	INR 24,000/- per participant
Foreign Participants	Any	USD 450 per participant (Incl. of all)

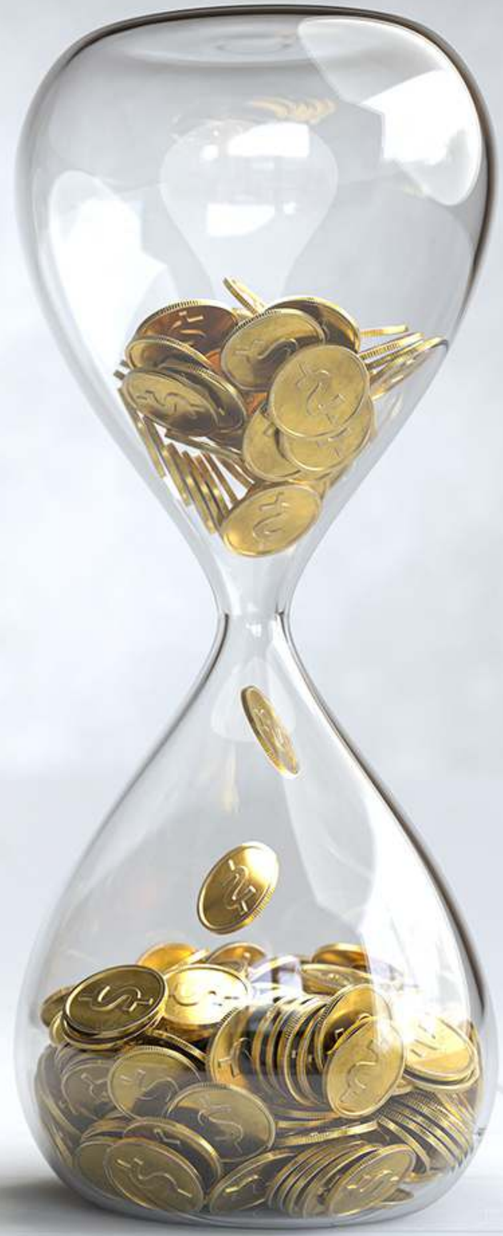
*Convenience fees may apply.

For Bulk Registrations from one Organization

Category	Number of Participants	Total Fee (inclusive of taxes)*
Students	11 and above	INR 7,000/- per participant
Industry Professionals	11 and above	INR 20,000/- per participant

*Convenience fees may apply.

*TCA

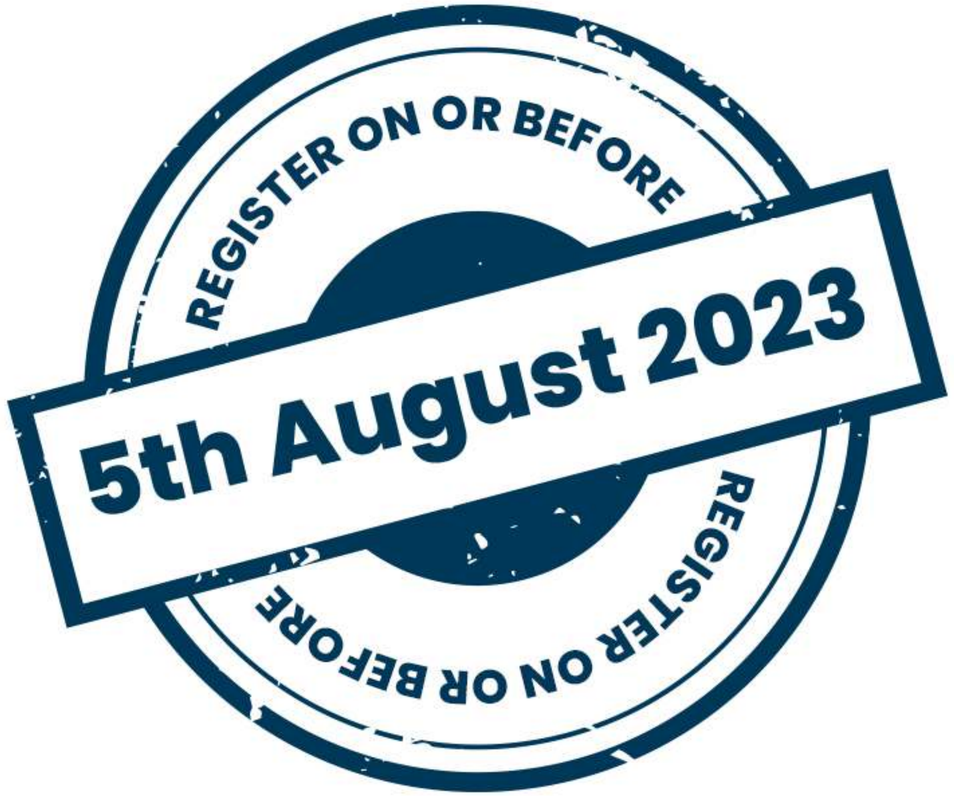


Early Bird Offer

Fee Structure

Category	Fee Category	Registration Fee (Incl. of all)*
For Indian Participants	Student	INR 7000/- per participant
	Academician/Faculty	INR 16,000/- per participant
	NITIE Alumni	INR 20,000/- per participant
	Industry Professionals /Others	INR 22,000/- per participant
Foreign Participants	Any	USD 425 per participant (Incl. of all)

*Convenience fees may apply.



For Bulk Registrations from one Organization

Category	Number of Participants	Total Fee (inclusive of taxes)*
Students	11 and above	INR 6,000/- per participant
Industry Professionals	11 and above	INR 18,000/- per participant

*Convenience fees may apply.

*TCA

Course Structure

Schedule

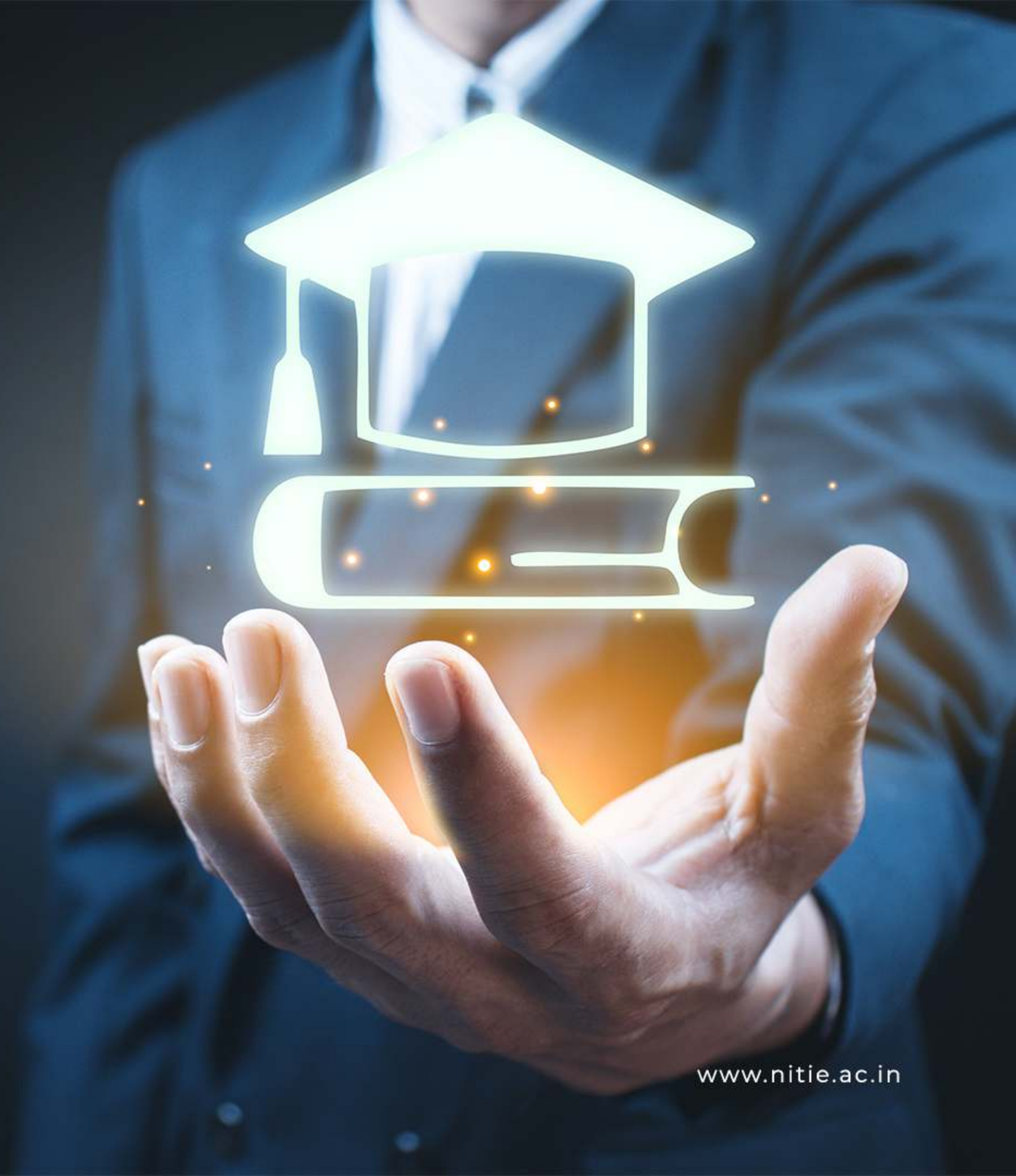
- Session Timings: Saturday and Sunday, 5:00 to 7:30 PM
- 6 Weeks (12 Sessions - 2.5 Hours/Session)

Mode of Instruction

- Online Platforms

Commencement Date

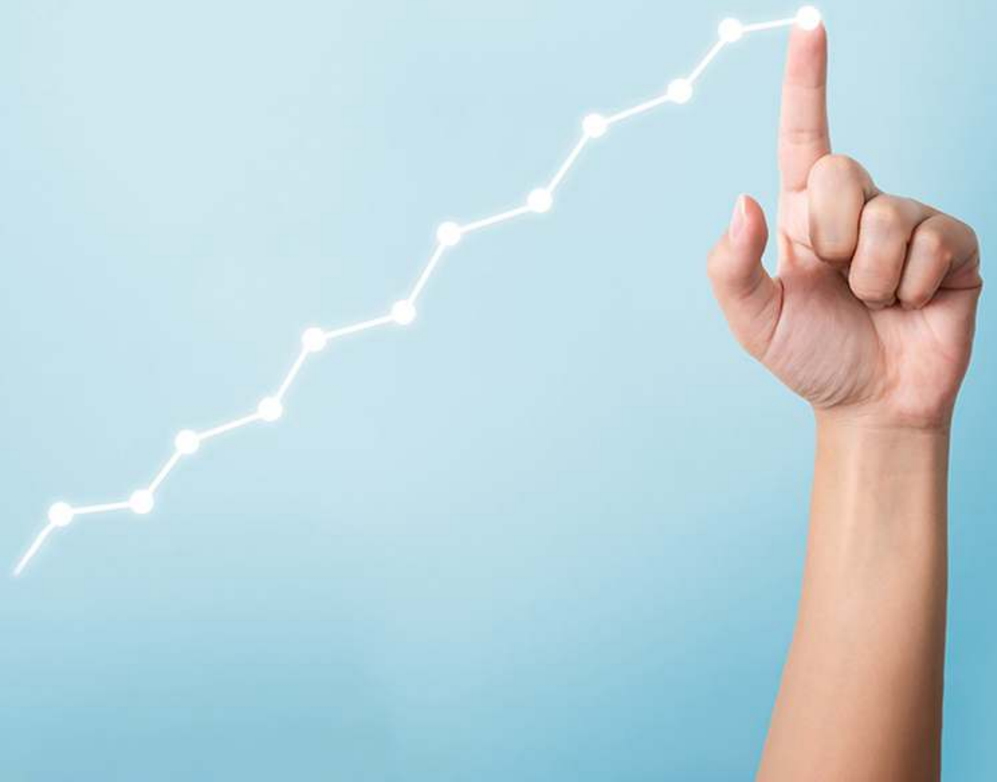
- 9th September 2023



Success of Previous Batch by NITIE

NITIE has successfully completed Global Online Certification Courses on: 'Business Analytics' (2021 & 2022) in association with Prof. David Simchi-Levi.

All the courses received an overwhelming response from 12000+ individuals from reputed national and international organisations. Some prominent academic institutions include the IITs, IIMs, IIFT, University of London, University of Warwick along with prominent organisations, which include P&G, HUL, GE, ITC, Amul, Deloitte, General Mills, IBM, Titan, Reliance, PwC, Siemens and many more.



Course Statistics

Course Statistics

- Supply Chain Digitization and Management
- Business and Operations Analytics
- Supply Chain Transformation through Digitization
- Supply Chain & Demand Analytics

About NITIE

National Institute of Industrial Engineering (NITIE) was established by the Government of India in 1963 with the assistance of the United Nations Development Programme (UNDP) and the International Labor Organization (ILO). NITIE has been consistently ranked among the top B-schools in India. NITIE is ranked 7th in the National Institutional Ranking Framework (NIRF) rankings for 2023 among Management Institutes across India. NITIE is committed to creating skilled professionals in diverse functional areas like Operations Management, Analytics, Finance, Marketing, Project Management, HR, Information Technology, and Sustainability Management. NITIE, widely known as the leading Institute in Supply Chain and Operations, aims to advance transformative education and industry-inspired research in different domains, thus dedicating itself to helping Indian businesses to make their presence felt globally. The institute strongly links with private and public sectors, national research institutes, other academic institutions, universities, government organisations, and communities. NITIE is dedicated to helping Indian businesses to make their presence felt globally. NITIE has decided to act as a driving force in the manufacturing sector and all dynamic sectors of the Indian economy. It has aligned its vision and activities in line with the current and future needs of the Indian economy and its vibrant and growing sectors.

Connect with the Coordinating Team

Faculty Coordinators from NITIE, Mumbai:

- **Prof. Veepan Kumar**
- **Prof. Amit Kumar Das**