



**NITIE**

National Institute of  
Industrial Engineering  
Mumbai - India

# GLOBAL ONLINE CERTIFICATION COURSE ON **BUSINESS AND OPERATIONS ANALYTICS 2022**

In collaboration with



**PROF. DAVID SIMCHI-LEVI**

MIT Professor, Business & Supply Chain Analytics  
Director, Data Science Lab  
Massachusetts Institute of Technology, USA



**PROF. MANOJ K. TIWARI**

Director, NITIE Mumbai

## Course Timeline:

12<sup>th</sup> Feb '22 to 13<sup>th</sup> March '22  
(Saturday & Sunday)

4:30 PM to 7:30 PM IST







## ABOUT THE COURSE

Business analytics refers to the ways in which enterprises can use data to gain insights and make better Operation decisions. The ability to use data effectively to drive rapid, precise, and profitable decisions has been a critical strategic advantage for companies. For example, Capital One uses sophisticated analytic capabilities to match credit card offerings to customers and WalMart uses analytics to monitor and update its inventory in a way that allows it to serve its customers at an exceptionally low cost.

After the tremendous success of Business and Operations Analytics 2021, NITIE is proud to present the Global Online Certification Course on 'Business and Operations Analytics 2022' in association with Prof. David Simchi-Levi (MIT, USA).

The course emphasizes that Business and Operations Analytics is not a theoretical discipline: these techniques are only interesting and important to the extent that they can provide real insights and improve the speed, reliability, and quality of decisions.

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.

With business analytics being an integral part of modern management, this course should provide you with the foundation to understand and apply analytical methods to drive value.





## FOCUS



- Optimizing Complex Decisions
- Machine Learning Techniques
- Optimal Model Selection
- Integration of Techniques

Learn basic analytics methods & analyze case studies on organizations that successfully deployed these techniques

Identify, evaluate, and capture business analytics opportunities that create value

Estimate the value created using business analytics to address an opportunity

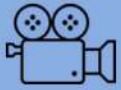
Develop critical thinking about the data and the analyses

## COURSE OUTCOME





## COURSE HIGHLIGHTS



Lecture Recordings for  
1 week duration



Live Exposure to  
Professional Experiences



Learning through  
Exhaustive Case Studies



Lecture slides &  
Supplementary material  
after each session

## COURSE CONTENT

### Week 1: Introduction to Business Analytics

- Course Inauguration & 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
- Bayesian Analysis
- Error Types

### Week 4: Integrated Analytics

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

### Week 5: Case Study

- Case Studies:  
Retail; Manufacturing; High-Tech
- Course Summary & Conclusion







## COURSE STRUCTURE



12<sup>th</sup> February '22 to  
13<sup>th</sup> March '22



30 Hour Course - 5 weekends  
10 sessions (3 Hours/Session)



4:30 PM - 7:30 PM IST  
Saturday & Sunday



Mode of Instruction  
Live via WebEx

## COURSE CERTIFICATE



### NATIONAL INSTITUTE OF INDUSTRIAL ENGINEERING (NITIE), MUMBAI - INDIA

(AN AUTONOMOUS BODY UNDER THE MINISTRY OF EDUCATION, GOVERNMENT OF INDIA, ESTD. IN 1963)

\*\*\*\*\*

AWARDS THIS CERTIFICATE TO

**William Jones**

in recognition of successful completion of  
**Global Online Certification Course on  
Business and Operations Analytics 2022,**  
(Thirty Hours Online Course)

conducted by the Institute during the period 12th February, 2022 to 13th March, 2022,  
dated 20th March, 2022

**Prof. David Simchi-Levi**

Course Instructor  
Professor - Business & Supply Chain Analytics  
Director, Data Science Lab  
Massachusetts Institute of Technology, USA



SCAN TO VERIFY  
OR  
Visit [www.nitie.ac.in/boa2022](http://www.nitie.ac.in/boa2022)  
Reg ID:

**Prof. Manoj K. Tiwari**

Course Instructor  
Director, NITIE Mumbai

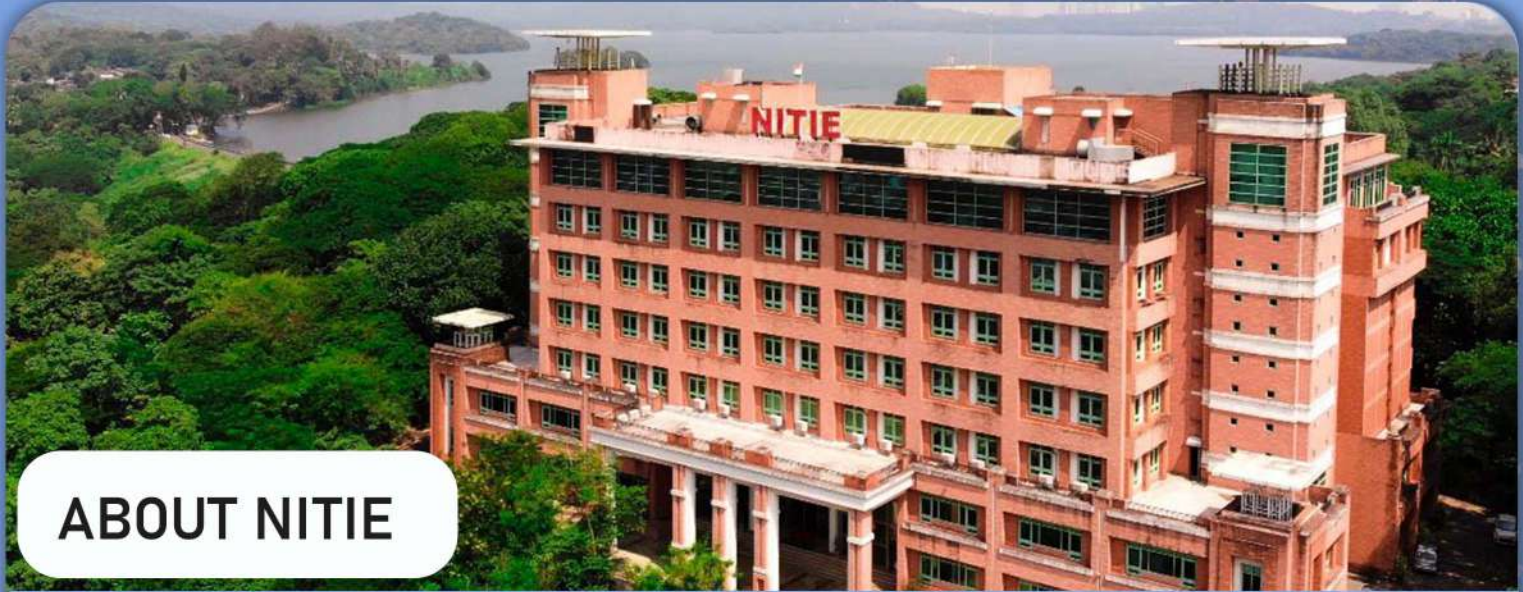


Signed jointly by  
Prof. David Simchi-Levi  
and Prof. Manoj K Tiwari



Attendance & Quiz participation  
criteria for course completion





## ABOUT NITIE

- National Institute of Industrial Engineering (NITIE), established in 1963 by the Government of India with the assistance of United Nations Development Project (UNDP) through the International Labour Organization (ILO), is one of the leading institutes for Management education
- It has proven its excellence by continuously being featured in India's best B-schools list and was ranked 11th in the most recent Business Today Survey
- NITIE, a pioneer in Industrial Management has been positioned 12th amongst management schools in India by National Institutional Ranking Framework (NIRF) in 2021.
- NITIE, widely known as the leading Institute in the area of Supply chain and Operations, holds a purpose in advancing the transformative education and industry inspired research in different domains thus dedicating itself to help Indian businesses to make their presence felt globally
- It has a strong linkage with private and public sectors, national research institutes, other academic institutions, universities, government organizations, and communities
- The institute has decided to act as a driving force not only in the manufacturing sector but 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 industries making them vibrant and influential globally





## COURSE INSTRUCTORS

### 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 Professor for Business & Supply Chain Analytics and the Director of Data Science Lab at Massachusetts Institute of Technology, USA.
- He is the Editor-in-Chief of the INFORMS journal, Management Science, the former Editor-in-Chief of Operations Research, Naval Research Logistics and a member of the board for several scientific journals including Transportation Science and Telecommunication Systems, and a former Area Editor of Transportation for Operations Research.
- He 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.
- Prof. Simchi-Levi founded LogicTools, now a subsidiary of IBM, which provided software solutions and decision support systems to clients such as Caterpillar, ConAgra, Kraft Foods, Mercer Management, Ryder, SC Johnson, UPS, U.S. Postal Service, Walgreens, etc., and later co-founded OPS Rules, and Opalytics, both now part of Accenture.
- MIT profile - [Click here](#)
- LinkedIn Profile - [Click here](#)





## COURSE INSTRUCTORS

# Prof. Manoj K. Tiwari

Director, NITIE Mumbai



- Prof. Manoj K Tiwari, Director-NITIE, is on-lien from his post as Professor, Department of Industrial and Systems Engineering at Indian Institute of Technology, Kharagpur.
- He has been ranked 1 among top 100 individual researchers across the world who had published research articles in International Journal of Production Research (1985-2010), the top leading author for Supply Chain Analytical Techniques (Computer & Industrial Engineering), among Top 20 most productive authors in the area of Production and Operations Management in the last 50 years (Int. Journal of Production Economics, 2009) 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).
- He is the recipient of “Most Influential Researcher Award” in the domain of Operations and Supply Chain Management.
- 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.
- NITIE Profile - [Click here](#)
- LinkedIn Profile - [Click here](#)





## COURSE FEES

### For Individual Registrations:

Category	Fee Category	Course Fee	GST (18%)	Total Fee (Inclusive of Taxes)*
<b>Participants from India</b>	Student	INR 3,500	INR 630	INR 4,130
	Academician / Faculty	INR 6,000	INR 1,080	INR 7,080
	NITIE Alumni	INR 7,000	INR 1,260	INR 8,260
	Industry Professionals & Others	INR 12,000	INR 2,160	INR 14,160
<b>Foreign Participants</b>	Any	USD 200 (Incl. of all)		

\* Convenience Charges may apply.

### For Bulk Registrations from one organization (Fee Per Participant):

Category	Slabs	Course Fee	GST (18%)	Total Fee (Inclusive of Taxes)*
<b>Students</b>	Slab 1 (11-25)	INR 3,100	INR 558	INR 3,658
	Slab 2 (26-50)	INR 2,700	INR 486	INR 3,186
	Slab 3 (>50)	INR 2,300	INR 414	INR 2,714
<b>Industry Professionals</b>	Base Price (5-10)**	INR 12,000	INR 2,160	INR 14,160
	Slab 1 (11-25)	INR 10,500	INR 1,890	INR 12,390
	Slab 2 (26-50)	INR 9,000	INR 1,620	INR 10,620
	Slab 3 (>50)	INR 7,500	INR 1,350	INR 8,850

\* Convenience Charges may apply.

\*\* For registrations less than 5 from one organization, direct individual payments should be made

Please write a mail to [analytics@nitie.ac.in](mailto:analytics@nitie.ac.in) for more details on bulk registration.







# BUSINESS AND OPERATIONS ANALYTICS 2021 SUCCESS

(3rd Jul '21 – 5th Sept '21)

**3000**  
Participants

**700+**  
Professionals

**350+**  
Organizations

**17**  
Countries



Canada | China | Dubai | India | Indonesia | Malaysia | Mexico | Myanmar | Qatar  
Scotland | Singapore | South Korea | Sweden | Taiwan | UAE | UK | USA

## COURSE RATING

EXTENT AND DEPTH OF  
TOPICS COVERED



COURSE  
MANAGEMENT BY NITIE



PEOPLE WILLING  
TO ATTEND FUTURE  
COURSES BY NITIE



ATTENDANCE  
ACROSS ALL  
LECTURES

RELEVANCE OF  
SUPPLEMENTARY MATERIALS



APPLICATION OF  
CONCEPT LEARNT







## ANALYTICS 2021 TESTIMONIALS

I liked the approach of Prof David Simchi-Levi, how he approached the course from simple basic problems and then built on them to go to a little complex and explained how it could go to super complex problems of real life. This was very important, given the diversity of Participants which also included students. Also, kudos to Prof. Manoj Tiwari and his organizing team for making this course possible.

**Mr. Sandeep Pratap**  
*Lead - RM Procurement - Asia & India*  
**UPL Limited**

I loved this course for the way in which Machine Learning and Operations Research was integrated in the course content and then, it was shown through examples how they are complementary in nature in terms of problems they solve in real life.

**Mr. Deepjyoti Chakraborty**  
*Demand Fulfillment Planner*  
**Castrol**

I am a medical graduate. I have applied some basic techniques of operations management through my career in some of my job responsibilities by self learning mode. This course was a great great help. Prof. David Simchi-Levi made the learning journey of a difficult subject appear rather simple. It provided clear understanding about the fundamentals of OR & operations analytics for me. I like the applied learning with use of case studies & simulation using Excel; the overall teaching methodology, delivery style & pace, pausing after every concept to answer each & every question of participants to their satisfaction. true & engaging learning. I did not feel disconnected at any time being a non engineer, although I was slow on my assignments. Thank you NITIE team for this wonderful learning & qualification!!! Excellent reading resources.

**Dr Ragini Narendra Mohanty**  
*VP Emerging Technologies and ERP, Professor*  
**S. P. Mandali's WeSchool**

I liked the structure, commitment of NITIE and the passion. The team did a tremendous job to stay on top of things. Coordinating a global event with 2500+ students and ensuring a seamless event for 10 weekends is easier said than done. Kudos to the team!!

**Mr. Venkateswara Duggirala**  
*Senior Engagement Director*  
**Tata Group North America**

It was a great learning platform and a unique way to learn insights from a bonafide professor, Prof. David Simchi-Levi, about Machine Learning, Artificial Intelligence, Linear Programming, Digitalization and various other algorithms with industrial case studies. The Business & Operation Analytics course will be helpful to use some of the unique ideas to showcase in my professional career.

**Mr. Santosh Kumar Das**  
*Sr. Manager Demand & Supply Chain*  
**Sun Pharma Industries Limited**





# SUCCESS OF NITIE'S GLOBAL COURSES

## Supply Chain Digitization and Management (16th Jan '21 – 21st March '21)

**2500+**  
Participants

**13+**  
Countries

**250+**  
Organizations

**1000+**  
Professionals

[Click here](#) to download the course report

## End-to-End Supply Chain Transformation through Digitization (13th Nov '21 – 5th Dec '21)

**350+**  
Participants

**9+**  
Countries

**110+**  
Organizations

**EXCLUSIVELY**  
Industrial  
Professionals

[Click here](#) to download the course report

## Participating Organizations

### Educational Institutions



### Corporates







## ANALYTICS 2022 COORDINATING TEAM

[Click here](#) for FAQs

For all queries, please email to  
[analytics@nitie.ac.in](mailto:analytics@nitie.ac.in)

or contact:

Mr. Nishant Kumar Singh

 +91-85960 53860

Mr. Prashant M

 +91-90039 59623

### Faculty Coordinators:

Prof. Priyanka Verma

Prof. Sushmita Narayana

Prof. Debabrata Das

### Student Coordinators:

Ms. Aayushi Kumari Yadav

Mr. Prashant M

Mr. Giriraj Jhawar

Ms. Priti Bhole

Mr. Jyothikrishnan

Mr. Rutvik Ghiya

Mr. Nishant Kumar Singh

Mr. Shibi Chakravarthy

FOLLOW US  
FOR MORE UPDATES

