



**INDIAN INSTITUTE OF MANAGEMENT
LUCKNOW, INDIA**



KELLEY SCHOOL OF BUSINESS
INDIANA UNIVERSITY



**ONE YEAR
CERTIFICATE PROGRAMME IN
BUSINESS ANALYTICS
FOR EXECUTIVES**

2018-19

(December 01, 2018 – December 14, 2019)



Introduction

Indian Institute of Management, Lucknow (IIML) in association with Kelley School of Business (KSB), Indiana University, USA is offering one year Certificate Programme in Business Analytics for Executives (CPBAE).

The purpose of this programme is to develop skills and a mindset for participants that will allow them to identify and seize business opportunities using business analytics tools. The proposed programme is having both On Campus and Online Learning channels so that participants need not take long breaks from their work but at the same time get benefits of a continuous learning environment.

Key Features

- The programme is jointly taught by highly experienced faculty from Indian Institute of Management Lucknow, India and the Kelley School of Business, Indiana University, USA.
- A combination of both On Campus Modules at IIM Lucknow as well as Online Modules. Both Class room and online learning platform are used for this programme. It offers flexibility since the participants can access the internet and attend online classes from any location.
- Training on enterprise miner by SAS Institute (India) Private Limited in Module III.

Programme Delivery

- CPBAE consists of 240 hours of teaching divided into Five Modules.
- Each module at IIM Lucknow consists of 8 days, starting from Saturday afternoon and ending in the forenoon of next Saturday.
- Online delivery will be via CANVAS course management system, the Kelley School of Business online learning platform, twice a week on Wednesday and Saturdays (two hours each).
- First, Third & Fifth Modules will have On Campus classes whereas, Second and Fourth module will have Online classes.

Programme Objectives

(i) Be able to recognize some of the key issues for managerial considerations

- Identifying opportunities for and challenges associated with predictive analytics in organizations.
- Leveraging data assets for decision making.
- Realizing the significance of the entire value chain of business analytics.

(ii) Be able to understand the overall process of business analytics

- Basic understanding of the business analytics process that includes: 1) business understanding; 2) data understanding and preparation; 3) modeling; 4) evaluation; and 5) deployment.

(iii) Deep dive into the concepts of statistics and its application in analytics domain

- Understand various probability distributions and their applications
- Sampling, test of hypothesis and design of experiment
- Various types of regression analysis
- Time series analysis and forecasting

(iv) Get cognizant with the associated best-of-breed tools for business analytics

- Hands-on exercises using Excel, R, SAS JMP, Tableau and OR tools, etc.

(v) Be able to use various operation research techniques in day to day work

- Hands on various operation research techniques such as linear programming concepts and goal programming.

- Business process analysis to improve operational efficiency and reduce cost.

(vi) *Gain insights of data mining and predictive analytics*

- Develop basic understanding of database management
- Multi-dimensional data modeling and data warehousing
- Understand classification and clustering techniques.
- Deep dive into advanced concepts such as neural nets and discriminant analysis.
- Realizing the business value of data driven decision making.

(vii) *Applied analytics using SAS Enterprise Miner*

- Gain skills required to assemble analysis flow diagrams using the rich tool set of SAS Enterprise Miner for both pattern discovery and predictive modeling.
- Prepare for SAS predictive modeling & SAS Business Visual Analyst Certificate Examination.

(viii) *Be able to apply Operations Management Concepts to improve productivity*

- Identifying opportunities for and challenges associated with process design and analysis.
- Factory Physics Concepts and applications
- Six Sigma techniques and applications in process improvement
- Evidence based process analysis using process mining

(ix) *Be able to understand and utilize concepts associated with simulation, artificial intelligence and various domain specific analytics models.*

- Simulations with Multiple Uncertainties Transient versus Steady State and Advanced Simulations modeling
- Domain Specific analytical models such as supply chain, inventory and financial models

(x) *Get cognizant with the associated best-of-breed tools for business analytics*

- Hands-on exercises using SAS and @RISK.
- Build and understand predictive models such as decision trees and regression models
- Compare and explain complex models
- Generate and use score code
- Apply association and sequence discovery to transaction data

Capstone Project

The Capstone Project is an important part of the programme. The participants would identify the business analytics problem, develop and evaluate the alternative course of action and suggest the best option. Each participant would present the findings of his/her study along with a written submission. The evaluation of the project report is to be done by IIML faculty.

Programme Modules

- **Module I** - Introduction to Business Analytics
- **Module II** - Data Mining and Regression Modelling
- **Module III** - Predictive Modelling and Visual Analytics using SAS
- **Module IV** - Simulation and Optimization for Business Analytics
- **Module V** - Developing Value through Business Analytics Applications

Our Academic Partners

- **Kelley School of Business (KSB), Indiana University, USA**

Once a participant has completed the certificate, they would be eligible to transition to either Master of Science in Business Analytics (MSBA) degree programme or Masters of Business Administration (MBA) degree programme at KSB and transfer the 12-credits from the certificate.

- **SAS Institute (India) Pvt. Ltd** (Carries free certification attempt for)
 1. SAS Predictive Modelling Certification ([Predictive Modeler](#))
 2. SAS Business Visual Analyst Certification ([Visual Business Analyst](#))

Course details of SAS

1. Predictive Modelling

Course Objective

This course covers the skills required to assemble analysis flow diagrams using the rich tool set of SAS Enterprise Miner for both pattern discovery (segmentation, association, and sequence analyses) and predictive modeling (decision tree, regression, and neural network models).

Course Contents

- Introduction to SAS Enterprise Miner
- Accessing and Assaying Prepared Data
- Introduction to Predictive Modeling with Decision Trees
- Introduction to Predictive Modeling with Regressions
- Introduction to Predictive Modeling with Neural Networks and Other Modeling Tools
- Model Assessment and Implementation
- Introduction to Pattern Discovery

2. Visual Business Analytics

Course Objective:

This course teaches how to explore data and build reports using SAS Visual Analytics. You will learn how to build queries in SAS Visual Data Builder, and you will also learn the basics of SAS Visual Analytics Administrator.

Course Contents

- Getting Started with SAS Visual Analytics
- Using the SAS Visual Analytics Explorer
- Designing Reports with SAS Visual Analytics
- Social Media Analytics
- Creating Analyses and Reports with SAS

Evaluation system for the Programme

The class performance will be based on following components:

- On campus Group projects
- Assignments
- Written exams
- Projects

Faculty members may choose a few or all above-stated components. Typically, evaluation load will be on 60% on individual performance and 40% from group performance.

Certification

On successful completion of this programme, participants will be awarded:

- Joint certificate from IIML and Kelley School of Business (KSB), Indiana University.
- A separate certificate from KSB and
- A certificate of participation by SAS.

Alumni Status

You will be an Executive Alumni of IIM Lucknow and Kelley Alum of KSB after successfully completing the programme.

Who Can Apply?

Applicants with Graduation or Post Graduation Degree with a minimum of 50% aggregate, CGPA (5 on a 10 point scale) or CA/ICWA/CS and a minimum of 3 years full-time post qualification work experience as on **October 15, 2018**. For applicants with relevant qualification and/or industry experience, a relaxation in the minimum eligibility criteria may be considered. Preference will be given to the applicants with Graduation or Post Graduation in Mathematics, Engineering, Economics, and Statistics. Also, executives working in the domain of Business Analytics are especially encouraged to apply.

How to Apply?

Submit Online Registration Form (Expression of Interest) along with application fee details either through Demand Draft of ₹ 2000/- (Rupees Two Thousand only), drawn in favor of “Indian Institute of Management Lucknow”, payable at Lucknow or via NEFT to the following Bank Account Details:

BENEFICIARY NAME	INDIAN INSTITUTE OF MANAGEMENT LUCKNOW
SB ACCOUNT NO.	07231450000294
BANK NAME	HDFC BANK LIMITED
BANK ADDRESS	A R CENTRE, DR. B N VERMA ROAD, OPPOSITE GULMOHAR HOTEL, LUCKNOW-226018
BANK BRANCH	AMINABAD BRANCH
IFSC CODE	HDFC 0000723
In case of NEFT/RTGS transfer, please email following details to cpbae10@iiml.ac.in; mdpfin@iiml.ac.in	1. Participant Name: 2. Transaction No. through NEFT: 3. Transaction Date: 4. Transaction Amount: 5. Bank Name: 6. Branch Name:

Eligibility Criteria:

1. Graduation or Post Graduation Degree with a minimum of 50% aggregate, CGPA (5 on a 10 point scale) or CA/ICWA/CS.
2. Three-year post qualification full-time work experience as on October 15, 2018.

Candidates having less than three years of experience with an analytical mindset and remarkable academic credentials may be considered.

Selection Process Requirements:

1. Duly filled-in Application Form
2. Statement of Purpose
3. Personal Interaction (Interview)
4. In all matters relating to admission, the decision of the Indian Institute of Management Lucknow (IIML) will be final and binding on the applicant. No correspondence will be

entertained from the applicant regarding his/her non-selection. The Institute reserves the right to cancel or postpone this programme.

Fee Structure and details:

The total fee for this programme is ₹4,50,000 per participant + GST @ 18% or as applicable as per Govt. of India guidelines and is payable in four installments. Fee includes tuition fee, accommodation (twin sharing basis) and food for the duration of residencies and course material. Participants will have to bear their travel expenses for attending On Campus Modules at IIM Lucknow.

Installment Details:

Installment	Last Date for Payment	Fee (₹)	GST @ 18% (₹)	Fee including GST (₹)
Application Fee	At the time of Application	2,000/-		
Acceptance Fee	November 05, 2018	1,00,000/-	18,000/-	1,18,000/-
First	November 26, 2018	1,50,000/-	27,000/-	1,77,000/-
Second	June 10, 2019	1,00,000/-	18,000/-	1,18,000/-
Third	December 02, 2019	1,00,000/-	18,000/-	1,18,000/-
Total		4,50,000/-	81,000/-	5,31,000/-

Banks may provide loan for the programme.

Early bird Discount:

If we receive the duly filled in Application Form along with Application Fee of ₹2,000/- on or before 05:00 p.m. on September 24, 2018, the candidate will be entitled to an Early Bird Discount of ₹5,000/- in the total programme fee.

Group Discount:

If we receive 5 or more than 5 nominations from a particular company, each candidate gets a discount of Rs. 10,000/- in total programme fee (applicable in case of sponsored candidates only)

Admission Schedule

Activity	Date
Last date to avail Early Bird Discount	September 24, 2018
Last date to receive Application Form	October 15, 2018
Module - I at IIM Lucknow Campus	December 01 - 08, 2018
Module - II Online Classes (Course I)	December 12, 2018 - March 13, 2019
Module - II Online Classes (Course II)	March 20 - June 05, 2019
Module - III at IIM Lucknow Campus	June 15 - 22, 2019
Module - IV Online Classes (Course III)	June 26 - September 11, 2019
Module - IV Online Classes (Course IV)	September 18 - December 04, 2019
Module - V at IIM Lucknow Campus	December 07 - 14, 2019

The completed application form along with the application fee should reach The Senior Administrative Officer (Academic Services), MDP Office, Indian Institute of Management, Prabandh Nagar, IIM Road, Lucknow-226013, latest by 5:00 pm on October 15, 2018. Kindly mention CPBAE APPLICATION FORM CPBAE 10 (2018-19) on the top of the envelope.

For further details, please contact us on 0522-6696278/82/83 or mail us on cpbae10@iiml.ac.in.

PROGRAMME DIRECTORS



Dr. Abhijit Bhattacharya is a Fellow of Royal Statistical Society, London and currently serving Indian Institute of Management as Professor in Decision Science Group. He earned his Ph. D. in Statistics from Indian Institute of Technology, Kharagpur in 1986. Before joining IIM Lucknow, he served IIT Kharagpur and Central Agricultural University, Pusa. He has presented papers in several International and National Conferences and Seminars and has published extensively in reputed Indian and foreign journals which include Microelectronics and Reliability, International Journal of Systems Science, Energy Systems and Policy, Agricultural Systems, Journal of Applied Statistics, Journal of the Operational Research Society, Asian Economic Review and Transactions of Indian Association of Productivity, Quality and Reliability. He can be reached at abhijit@iiml.ac.in.



Dr. Gaurav Garg is currently serving as Associate Professor in Decision Sciences area at IIM Lucknow. He holds PhD in Statistics from IIT Kanpur. Dr. Garg is involved in teaching basic and advanced Statistics courses to PGP and FPM students. His research interests are linear models, regression analysis, statistical inference and multivariate analysis. He can be reached at ggarg@iiml.ac.in.

About the Indian Institute of Management Lucknow

- Indian Institute of Management Lucknow (IIML) is one of the premier business schools in India. From the sprawling about 185 acres campus, the Institute offers world class education in major areas of management and provides an ambiance for genuine intellectual pursuit, excitement, and professional growth.
- The Institute's carefully designed and high impact Management Development Programmes train business leaders, senior executives, and practicing managers from various sectors of the economy in all disciplines of management education and thought. The Institute provides cooperation and support to Industry and the Government through its large number of prestigious Consulting Assignments and Research Projects.
- The Institute has an internationally acclaimed Postgraduate Programme in Management, Agri-business Management and Fellow Programme in Management known for its quality, rigor and global orientation.
- The Institute also runs a well-accepted One-Year Part-time General Management Programme for Executives (with 240 hours of teaching in four "On-Campus" modules of 9 days each).
- The Noida campus, as an extension of IIM Lucknow, has been established to provide globally competitive management education to the professionals. The Noida campus has an evening programme leading to PGDBM for Working Managers (WMP). Besides, the Institute has one year full-time International Programme in Management for Executives (IPMX). In addition to these, the Institute has launched distance learning programs (e-MDPs), besides many other short duration programs.
- The Institute has well equipped air-conditioned Lecture Rooms, Library, Computer Centre and comfortable on-campus air-conditioned board and lodging arrangements on single

occupancy basis for the Management Development Programme participants at both the campuses.

- IIM Lucknow has collaboration with some Business Schools in Europe, Australia, and Canada for Faculty and Students Exchange.
- The Lucknow campus is located about 21 KMs away from the Railway Station and 31 KM from the Airport, on the Lucknow-Sitapur highway and Hardoi-Sitapur bypass. The Noida campus is located at Plot No. B-1, Sector 62, Noida near the Delhi-Ghaziabad highway (NH-24) about 25 KMs away from New Delhi Railway Station and about 40 KMs from the Domestic Airport.

About the Kelley School of Business (KSB), Indiana University, U.S.A

Kelley School of Business is in the business of creating career momentum. Their students have the talent to succeed, the humility to grow and the tenacity to persevere. That spirit results in graduates with the knowledge and skills needed to meet new challenges, to make positive change possible and to contribute to their organizations from day one. They have their roots in the first business course offered at Indiana College in Bloomington in 1830. Indiana College grew to be Indiana University, and the School of Commerce and Finance, established in 1920, grew to be the Kelley School of Business. KSB is ranked 7th by Worldwide Financial Times 2017 and 4th Among U.S. Schools by Financial Times 2017.

Your KSB contact will be Ms. Libby Andrew. She can be reached via email landrew@indiana.edu. You can also visit the website at <https://kelley.iu.edu/>

About the SAS Institute (India) Pvt. Ltd

SAS Institute (India) Pvt. Ltd. is a wholly owned subsidiary of SAS Institute Inc. SAS India operations are headquartered in Mumbai with regional offices in Bangalore, New Delhi and Pune. SAS Education is part of the SAS Institute. It primarily targeted SAS customers and the intent was to train the workforce at the client's sites. SAS solutions are licensed and implemented at more than 5,000 educational institutions worldwide. SAS has more than three decades of experience working with education institutions. SAS solutions are used at more than 75,000 business, government and university sites in more than 140 countries – including 93 of the top 100 companies on the 2014 Fortune Global 500® list.

Your SAS Institute contact will be Ms. Madhura Tendulkar. She can be reached via email madhura.tendulkar@sas.com. You can also visit the institute website at <https://www.sas.com>