



**भारतीय प्रबंध संस्थान रोहतक**

**INDIAN INSTITUTE OF MANAGEMENT ROHTAK**

मैनेजमेंट सिटी, दक्षिण बायपास, NH 10, सुनारिया, रोहतक, हरियाणा, भारत-124010  
Management City, Southern Bye Pass, NH 10, Sunaria, Rohtak, Haryana, India-124010

**Sub - Welcome to the Online Executive Education Programme in Business Analytics & Intelligence**

Dear Participants,

Greetings from IIM Rohtak!

Indian Institute of Management Rohtak welcomes you to the 50-hour online course on 'Business Analytics & Intelligence II'.

As scheduled, the programme will commence on 27<sup>th</sup> November, 2022 and will culminate on 12<sup>th</sup> March, 2023.

The programme has been designed by the experienced and learned faculty of IIM Rohtak with an objective to enable business professionals to interpret a real-world data set and make informed decisions. The program aims to impart essential knowledge of several basic as well as advanced data analytics techniques to the participants by engaging them in hands-on case studies and scenarios in real business contexts.

We believe that this programme is going to take the participants through a unique learning experience in the coming weeks.

The Information brochure comprising programme objectives, day-wise session schedule and faculty profile is being shared with you.

We wish you a pleasant and fruitful interactive learning experience.

Best wishes,  
IIM Rohtak



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**Indian Institute of Management Rohtak**

**Online Executive Education Programme in  
Business Analytics & Intelligence**

**Executive Education**

**Faculty Incharge**

**Prof Harshit Singh**

## **Course Objective**

The increasingly volatile, uncertain, complex and ambiguous business environments demand businesses to make effective decisions. Despite being able to generate and store large volumes of data, businesses often find it difficult to glean important insights from it. However, a new genre of approaches, referred to as data analytics, has evolved as a potent approach to process and manage large volumes of data, and deliver business value and corporate results quickly. It is believed that managers skilled in data analytics will be able to steer the next wave of management innovation, productivity, and growth. This course envisages to equip managers with basic, as well as, advanced data analytics techniques for handling and analyzing business data to enable informed and fact-based managerial decision-making.

## **Pedagogy**

A combination of cases, exercises, lectures, and hands-on practice using analytics tools will be used.

## Detailed Day-wise Session Schedule for e-MDP on Business Analytics & Intelligence (BAI) - 2

27<sup>th</sup> November 2022 – 12<sup>th</sup> March 2023

Time: 04.05 PM-05.20PM-05.40PM-06.55PM.

Session Topics	Session No.	Coverage of Topics	Faculty	Case/Reading
<b>Day 1. 27<sup>th</sup> Nov 2022 (Sunday)</b>				
Introduction to Business Analytics & Machine Learning	1-2	<ul style="list-style-type: none"> <li>Knowledge Discovery Process and life cycle</li> <li>Introduction to case methodology</li> </ul>	Prof Harshit Singh	Case: Research challenges and opportunities in business analytics
<b>Day 2. 4<sup>th</sup> Dec 2022 (Sunday)</b>				
Data warehouse and Analysis	3-4	<ul style="list-style-type: none"> <li>Introduction and need for data warehouse</li> <li>Star and snowflake schema</li> <li>Simulation</li> <li>ETL                             <ul style="list-style-type: none"> <li>OLTP/OLAP</li> </ul> </li> </ul>	Prof Praveen Ranjan Srivastava	<b>Case-let:</b> OLAP on ESPN data
<b>Day 3. 10<sup>th</sup> Dec 2022 (Saturday)</b>				
Tools for Business Analytics	5-6	Introduction to R	Prof Harshit Singh	<b>Case let:</b> HW Problem
<b>Day 4. 11<sup>th</sup> Dec 2022 (Sunday)</b>				
Tools for Business Analytics	7-8	Introduction to R	Prof Harshit Singh	<b>Case let:</b> Data Expo 2009
<b>Day 5. 18<sup>th</sup> Dec 2022 (Sunday)</b>				
Exploratory Data Analysis	9-10	Analyzing Data through GUI and Extracting Knowledge for further process	Mr. Sharad B Nalawade (IE)	Case let :IPL Data
<b>Day 6. 8<sup>th</sup> Jan 2023 (Sunday)</b>				
Analytical Techniques for Business Intelligence – I	11-12	<ul style="list-style-type: none"> <li>Classification Models</li> <li>Various Theories like kappa, accuracy etc. using, under the classification</li> </ul>	Prof Praveen Ranjan Srivastava	Case let : Grouping of flower & Bank loan
<b>Day 7. 14<sup>th</sup> Jan,2023 (Saturday)</b>				
Analytical Techniques for Business Intelligence – II	13-14	Ensemble Learning Techniques and its Application	Prof Praveen Ranjan Srivastava	Case let Grouping of flower & Bank loan
<b>Day 8. 15<sup>th</sup> Jan 2023 (Sunday)</b>				
Building Dashboard	15-16	Dashboard management	Mr. Sharad B Nalawade	
<b>Day 9. 22<sup>nd</sup> Jan 2023 (Sunday)</b>				
Application of Data and business Analytics	17-18	Human moral optimization	Prof Praveen Ranjan Srivastava	Case let: Human moral problem
<b>Day 10. 28<sup>th</sup> Jan 2023 (Saturday)</b>				
Analytical Techniques for Business Intelligence – IV	19-20	Web and Social Media Analytics	Prof Abhishek Verma	Case let :web analytics ,scraping a unique way
<b>Day 11. 29<sup>th</sup> Jan 2023 (Sunday)</b>				
Analytical Techniques for Business Intelligence – III	21-22	Clustering (ward method, Silhouette method, Gap statistic, Elbow method, Average, Single, Complete Method etc.) All the methods discussed with business scenarios	Prof Abhishek Verma	Segmenting the organic food market in Lebanon: an application of k-means cluster analysis (Article) + Data will be shared before the session

Day 12. 5 <sup>th</sup> Feb 2023 (Sunday)				
Analytical Techniques for Business Intelligence - V	23-24	Unsupervised Learning in Details, Lift Support, confidence	Prof Praveen Ranjan Srivastava	Case let : Market basket data and store lay out design
Day 13. 11 <sup>nd</sup> Feb 2023 (Saturday)				
Analytical Techniques for Business Intelligence - VI	25-26	<ul style="list-style-type: none"> <li>• Association Rule Mining</li> <li>• Apriori and Frequent Pattern tree</li> </ul>	Prof Pramod Mane	Retail Case Study - Association Mining
Day 14. 12 <sup>th</sup> Feb 2023 (Sunday)				
Analytical Techniques for Business Intelligence - VII	27-28	<ul style="list-style-type: none"> <li>• Text Analytics</li> <li>• Sentiment Analytics</li> <li>• Image Analytics</li> </ul>	Prof Ankit Kesharwani	Anggraini, N., & Suroyo, H. (2019). Comparison of Sentiment Analysis against Digital Payment "T-cash and Go-pay" in Social Media Using Orange Data Mining. Journal of Information Systems and Informatics, 1(2), 152-163.
Day 15. 19 <sup>th</sup> Feb 2023 (Sunday)				
Analytical Techniques for Business Intelligence - VIII	29-30	Recommendation System and Analysis (unsupervised Learning)	Prof Praveen Ranjan Srivastava	Marchand, A., & Marx, P. (2020). Automated product recommendations with preference-based explanations. Journal of retailing, 96(3), 328-343.
Day 16. 25 <sup>th</sup> Feb 2023 (Saturday)				
Application of Business Analytics: Marketing Analytics	31-32	Combination and Offering management and analysis	Prof Praveen Ranjan Srivastava	Case let : Cable Services: Combination and Offering
Day 17. 26 <sup>th</sup> Feb 2023 (Sunday)				
Tools for Business Analytics	33-34	Introduction to Python	Prof Pramod Mane	Exercise on Jupyter Notebook of Anaconda IDE
Day 18. 5 <sup>th</sup> March 2023 (Sunday)				
Application of Business Analytics: Sports Analytics	35-36	Analysis based on Sports data (Cricket)	Prof Praveen Ranjan Srivastava	Case: Best strategy to win a match: an analytical approach using hybrid machine learning-clustering-association rule framework
Day 19. 11 <sup>th</sup> March 2023 (Saturday)				
Big Data Analytics, Deep learning, Explainable AI (XAI) (introduction)	37-38	Concept discussion on emerging topics	Prof Harshit Singh	Case: What Does Explainable AI Really Mean? A New Conceptualization of Perspectives
Day 20. 12 <sup>th</sup> March 2023 (Sunday)				
Project Presentations	39-40	<ul style="list-style-type: none"> <li>• Project Presentations</li> </ul>	Prof Harshit Singh	

## Faculty Profiles



**Dr. Harshit Kumar Singh** holds a PhD from the Indian Institute of Management Ahmedabad in the area of Information Systems. Prior to joining his doctoral program, he has worked in the industry for three years as a Software Developer. He had completed his Bachelor's in Computer Science & Engineering from the National Institute of Technology Patna. His Ph.D. thesis investigates the challenges of large-scale adoption of work-from-home on organizations. His research interest includes IS competencies, motivational information systems with a focus on gamification and digital engagement. His teaching interests include Management Information System (MIS), Managing Software and Project Enterprises, Gamification Technology and Business, Data Structure and Algorithms and Theories of Information System.



**Dr. Praveen Ranjan Srivastava** is an Associate Professor in the Area of Information Technology Systems at IIM Rohtak. He did his Ph.D. in Computer Science & Engineering from Birla Institute of Technology & Science, Pilani. During Ph.D. tenure he got various fellowship and awards from leading organizations like Google, Microsoft etc. Dr. Srivastava received his Master of Technology (M.Tech) degree in Software Engineering from MotiLal Nehru National Institute of Technology, Allahabad. Before joining IIM Rohtak, he has served As a Faculty In the Department of computer science @ BITS Pilani, Pilani campus Rajasthan about 8 years. He is currently doing research in the area of Data analytics, E-commerce & software engineering using nature inspired techniques. His research areas are software testing management, Analytics and E commerce, Software Project Management, Quality assurance, Agile Modeling & Management etc. He has published research papers in various leading international journals and conferences in the area of Information System/Computer science and engineering. His H index is 15 and I index is 24. He has been actively involved in reviewing various research papers submitted in his field to different leading journals and various international and national level conferences. He conducts several MDPs also.



**Dr. Abhishek Verma** is working as an assistant professor in the area of Management Information Systems at IIM Rohtak. He completed his PhD from the Department of Industrial and Systems Engineering, Indian Institute of Technology Kharagpur. He received his Master of Technology (M. Tech) in Computer Science and Engineering from ABV-Indian Institute of Technology, Gwalior. Before joining IIM Rohtak, he has served as a faculty in GLA University, Mathura and VIT University, Bhopal campus. His work is published in many reputed international journals, conferences and book chapters. He is also a reviewer of many reputed journals and conferences.



**Dr. Ankit Kesharwani** is an assistant professor in the area of Marketing and Strategy. Prior to joining IIM Rohtak, he was associated with the Indian Institute of Foreign Trade (IIFT) Delhi Campus (2018-2021), and IBS Hyderabad (2014-2018). During his Ph.D., he was a visiting scholar at Fogelman College of Business and Economics, University of Memphis, USA (2011 -2012). He has about 8 years of post-Ph.D. experience in teaching MBA students, Executive MBA students, and Doctoral students. He has specializations in Digital Marketing, Marketing Analytics, Web and Social Media, Analytics, Business Research Methods, Marketing Research, Marketing Management, and Customer Relationship Management. He has taken training sessions for employees of various government and corporate organizations, including DGR, Tata Metaliks, Electronics Corporation of India Limited, Punjab National Bank, National Cooperative Dairy Federation of India Ltd, Engineers India Ltd, and Indian Energy Exchange Limited. He was also involved in various government projects like Sector-Specific Logistics Performance Index (LPI-S) 2020 by IIFT, Logistics Ease Across Different States (LEADS) 2021 report by Ernst & Young, and Khadi and Village Industries Commission (KVIC) 2021 project by IIFT. He has also published several research papers in premier international journals such as Information & Management, Electronics Commerce Research, Behaviour & Information Technology, Journal of Strategic Marketing, Journal of Global Information Management, Journal of Internet Commerce, etc. Primarily his area of research interest revolves around Technology adoption, Mobile Health Apps, Mobile Payment Apps, Online Advertising, Service Co-creation, etc.



**Dr. Pramod Mane** worked as an Assistant Professor and a Faculty, respectively, at the Indian Institute of Information Technology Dharwad and National Institute of Technology Raipur. He earned his PhD in Computer Science and Engineering from Indian Institute of Technology Indore. He holds an MTech in Information Technology from the National Institute of Technology, Durgapur. His area of interest is broadly at the intersection of Computer Science, Economics, and Social Science. His current research focuses on understanding the dynamics of strategic network formation in sharing economy.