SVKM'S NMIMS
Deemed to be UNIVERSITY

MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING

www.nmims.edu

TOP REASONS

Why we envision our Data Science Graduates occupying the Top Management Profiles...

B. Tech Data Science (Business Analytics) / M.Tech Data Science (Business Analytics)

GENERATING INSIGHTS FROM DATA

Amount of data being produced and captured is ever increasing at an exponential rate. Big data is great opportunity to develop the next generation technologies to store, manage, analyze, share and understand the huge volume of data that is generated in business. Based on interaction with our esteemed industry partners, a unique perspective of the issues resulting due to big data is developed by NMIMS.

World Perspective

International Data Corp. (IDC) forecasts that data generation will increase the 40 Zetta (or 40 billion terabytes) by 2020, 50 time more than what we had in 2010

The enormous amount of data can be used by business enterprises to generate new insights, enable better decision making and improve process in organizations.

Business analytics refers to the analysis of data using statistical , machine learning and quantitative techniques with the purpose of understanding past performance of the business and generating new insights for the future.

According to a forecast made by IDC, the global spending on business analytics services is expected to rise US $51.6 billion to US $89.6 billion in 2018.Despite the growing significance of business analytics, the supply of trained analytics professionals is lagging far behind the demand. According to McKinsey Global Institute, by 2018, the United States alone will need about 140000 to 190000 data scientist with deep analytical skills and another 1.5 million managers and analysts who can utilize large data sets to make better decisions.

INDIAN SCENARIO

In India the analytics market is also expected to double between 2013 and 2018, according to a report published by NASSCOM recently. There will be a need of about 2 lakhs data scientists in India over the next few years, according to sources in Analytics Special Interest Group set up by NASSCOM.

Hence, creation of trained industry –ready business analytics technocrat professionals is the need of the day.

FORECASTS FROM LEADING COMPANIES SUGGEST SO...

REASON 2

NMIMS MPSTME IS POISED TO MEET THE DEMAND

About

Business Analytics Centre (BAC) at Mukesh Patel School of Technology Management and Engineering which is one of the India's premier private Technology Management and Engineering schools is situated in Mumbai-The financial Hub and Nerve Center of the Country. The School is a constituent of SVKMs NMIMS. Deemed to be University.

Data Science course helps you gain expertise in Machine Learning Algorithms like K-Means Clustering, Decision Trees, Random Forest, Naive Bayes. You'll perform Big Data Analytics and solve real life case studies on Finance, E-Comm, and Social Media. This pr ogram which is delivered first time in India is evolved by NMIMS University with a very strong collaboration from various Industries and mostly focused on open source tools and techniques.

Vision

Data Science course helps you gain expertise in Machine Learning Algorithms like K-Means Clustering, Decision Trees, Random Forest, Naive Bayes. You'll perform Big Data Analytics and solve real life case studies on Finance, E-Comm, Social Media.

Mission

The data science curriculum provides a deep foundation in statistical analysis and programming for applications, as well as the project skills necessary to exercise this knowledge in the real world.The program's mission is to prepare students with a background in the natural and social sciences for successful careers helping organizations make sense of collected data and contribute important actionable insights.

REASON 3

REQUIRED BY ORGANISATIONS FROM ALL SECTORS.

REASON 4

PROGRAM CRAFTED BY ACADEMICIANS & INDUSTRY EXPERTS

PROGRAM INTRODUCTION

The **B.Tech** Data Science program is a modern degree designed to meet the increasingly aggressive demand for qualified data scientists in virtually every sector of the economy. Also called data mining, competitive intelligence, data analysis and data statistics, Data Science is one of the fastest growing career opportunities in the country as companies find themselves at a crossroads of having the technology to gather massive amounts of data but lacking the skilled scientists to tell them what the data means or how to use it to improvise their business practices.

B. Tech FIRST YEAR CURRICULUM

Semester I	Semester II
Engineering Mathematics – 1	Engineering Mathematics – II
Engineering Physics	Introduction to Data Science-Computer Organization & Architecture
Basic Electrical Engineering	Computer Programming – II
Engineering Drawing	Workshop practice
Engineering Mechanics – 1	Constitution of India
Computer Programming – 1	Spread sheet (including VBA) and Mat Lab
Communication skill	Basic Electronic
-	Intro to Statistics (Statistics - I)

REASON 5

Curriculum That Makes The Right Connections

B. Tech SECOND YEAR CURRICULUM

Semester III	Semester IV
Engineering Mathematics – III	Engineering Mathematics – IV
Environmental Studies	Statistics – III
Data Structure and Algorithm	Compiler construction
Digital Logic Design	Operating System
Database Management System	Advanced Database Management System
Statistics – II	Python programming
R Programming	SAS BASE Programming
System programming (Unix)	-

B. Tech THIRD YEAR CURRICULUM

Semester V	Semester VI
Principle of Economics and Management	Automata Theory
Computer Network	Mining Massive Data
Big Data Technology with Hadoop	Mobile Application development (Android and IOS)
Data Science Ethics	Introduction to IoT and Cloud computing
Research methodology	Extract, Transform and Load
Predictive Modeling	Linear programming (Operation research)
Data Visualization	Recommendation system
Statistical Learning	Cyber security

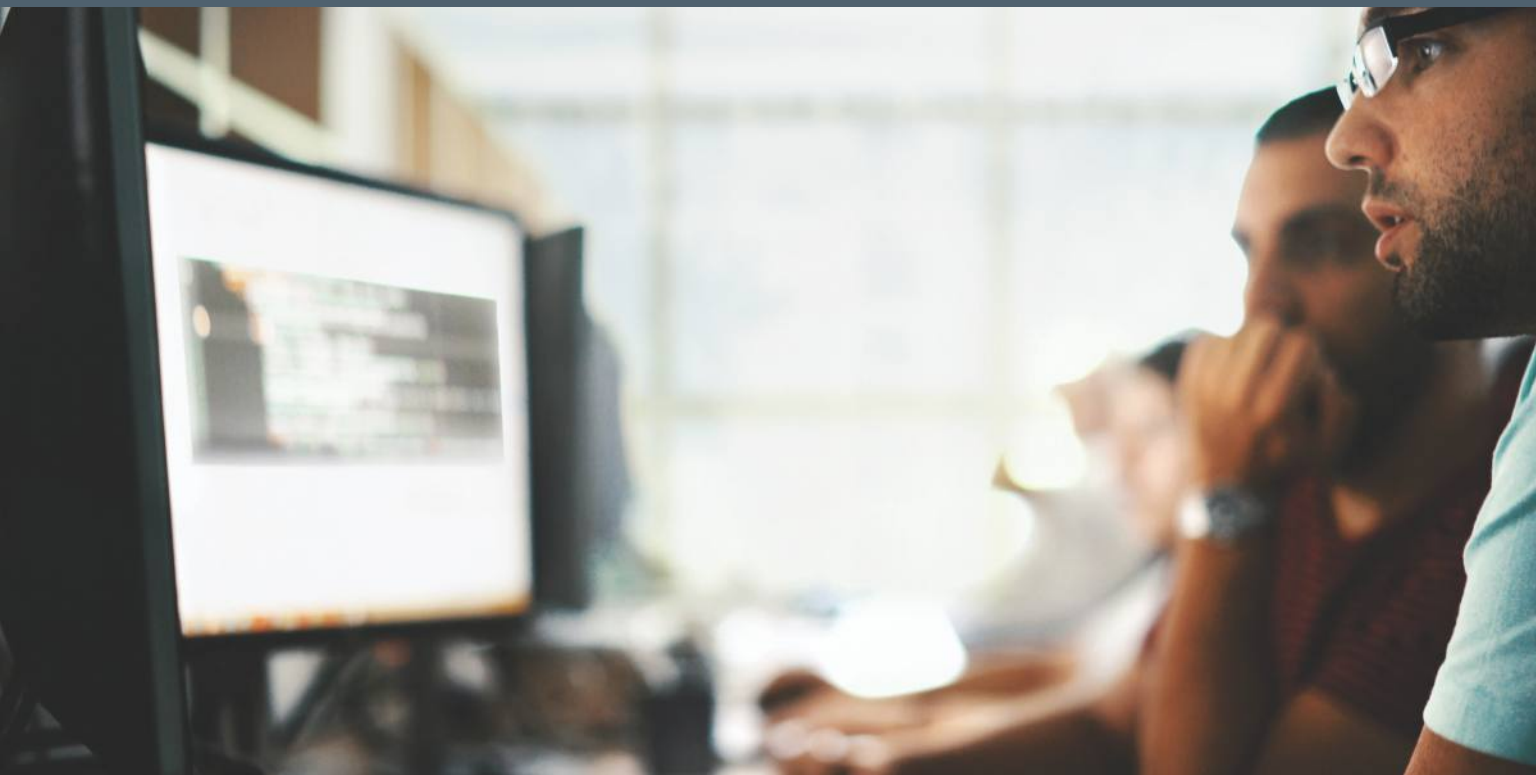
- Internship for 20 weeks (i.e.5 and half months) in industries

REASON 6

Real-Life Cases that takes learning closer to practical & futuristic working environments

B. Tech FOURTH YEAR CURRICULUM

Semester VII	Semester VIII
Introduction to Marketing	Advance Big Data
Intro to Finance	Elective: • Financial Engineering and Risk Management
Intro to Project mgmt. and supply chain	Capstone project • Dissertation
Data Analytics with Azure (Microsoft)	-
Elective • Machine learning • Neural network • AI	-



Grow alongwith
Inspiring Batchmates & Student Councils

Eligibility criteria for (10+2)

Candidate must have passed 10 + 2 or equivalent exam including international IB Diploma (IB certificate awarded is not eligible) & with science or science vocational & Minimum 50% marks in PCM. Preference will be given to candidates with AIEEE/JEE scores. Candidate with IB Diploma is eligible only if he/she has offered Mathematics at higher level (HL)

Candidates passing 10+2 or equivalent examination from Open or Distance learning (ODL) School recognized only by National Institute of Open schooling (NIOS) can apply for the program Subject to fulfilling the eligibility of the program & Candidates who have passed the 10+2 examination in part-time mode or through distance learning/correspondence/externally/open school other than NIOS are not eligible to apply for the courses.

Candidates should present single mark sheet. Candidates passing 10+2 or equivalent examination compartment are not eligible.

Note (for IB & Cambridge Candidate): Candidates called for admission counselling on the basis of NPAT merit list & who have not received final mark sheet till then will be given “Provisional Admission” based on predicted score. Fees will be accepted from such candidates but their admission will be confirmed only on submission of final mark sheet before the commencement of the program if found eligible.

In case of CBSE, ICSE, Online marks mentioned of HSC, total aggregate percentage should be mentioned in online registration form, not best of four, five, six or seven.

Candidate above 25 years of age are not eligible to apply.

Fees

Same as all other Engineering programs from Mukesh Patel School of Technology Management and Engineering.
Please bring with you Demand draft drawn in favour of 'SVKM's NMIMS' payable at Mumbai for Mumbai campus & 'SVKM's NMIMS' payable at Shirpur for Shirpur campus as per your choice of programme subject to availability of seat.

MASTERY IN BOTH TECHNOLOGY & ANALYTICAL SKILLS

The **M.Tech** program in Data Science aims to help Blend the engineering and business analytics domains by delivering a cutting edge curriculum that blends technology and Analytical Skills. This will create a learning experience for graduates and fulfill aspirations of building a career in Data Science.

PROGRAM OVERVIEW

- Contemporary 2 years program designed by NMIMS starting from July 2017
- Intended for participants from multidisciplinary background aiming to build a career in Data Sciences.
- Blend of classroom training (which is conducted at Mumbai) and technology enabled internship program of one year in diverse sectors.
- Provides 660+ contact hours for classroom training, one of the highest in the industry for M.Tech program.
- Our strength is exposure to various Analytics tools like R, SPSS, TABLEAU, SAS, Hadoop and other platforms for Big Data.
- Participants are expected to complete one year internship in industries of their choice for a period of twelve months full time and submit a dissertation which is one of the requirement for M. Tech program.
- Program structure allows flexibility for working professionals to work during the week days and attend the classes in weekend for this program, thus minimizing their work schedule disruption.
- Carefully crafted course by academics and industry professionals to cover the essentials of Analytics, provide training on Analytical tools, methodologies, technologies and apply these to solve real-world business problems.

PROGRAM OBJECTIVE

- The program is carefully crafted by distinguished academicians and industry professionals to help participants develop a thorough conceptual understanding and knowledge of the essentials and advanced topics in Business Analytics and Data Science.
- The program aims to provide practical training on contemporary Data Science and Business Analytics tools, Methodologies and Technologies.
- The program prepares participants to apply analytical skills sets to solve real world problems.
- Through the industry research project (Capstone), the program prepares participants to handle a real world business problem through various tools and methodologies discussed in the curriculum.

M. Tech CURRICULUM

Semester I

- Data Gathering, Cleaning (ETL Process)
- Data Science - I (Probability and Statistics)
- SAS Programming
- R/R Studio, SPSS and Tableau Programming
- Marketing Analytics for Strategic Decision
- Financial Institutions and Markets

REASON 9

Superlative Library & Labs
50000 volumes
250+ Global Periodical Subscriptions
Online databases and e-Journals

M. Tech CURRICULUM

Semester II

- Big Data Technology (Computational Technique for Large Scale Data Analytics)
- Data Science - II (Advanced Statistical Learning)
- Visual Analytics
- Machine Learning and Data Mining

Electives:
Financial Analytics
Marketing Analytics
Web Analytics (Social Media Analytics)
Text Mining and sentiment Analytics
Big Data Administration
Artificial Intelligence

Eligibility

B.Tech/BE or equivalent M. Sc Math/Stat/CS/IT MCA

All applicants must have undergone courses on basic mathematics, statistics, database management, programming languages during undergraduate and post graduate level or must have at least 2 years of work experience as on the date of submission of application.

Program Fee

The fee for M.Tech Data Science (Business Analytics) program is Rs. 4,50,000 per annum.

The fee covers the followings: Admission fee, Tuition fee, course materials and 2 SAS certifications (one attempt).

Selection Process

The admission committee would evaluate each applicant on several criteria to ensure that the participants selected for the program are well-rounded individuals with sufficient analytical / programming / statistical / mathematical backgrounds.

Each applicant would have to undergo an interview (PI) process to determine the fit, interest and inclination.

Besides, as assessment test would/may have to be administered. Each component of the application including the application form, assessment test and the interview performance would be adequately reviewed, and the subsequent selection of the participants for the program will be made.

Ideal Candidate

- Professional who is currently working in a job related to handling and processing data with analytics components.
- Work experience in Analytics domain and passion for data Analytics.
- Evidence of professional and academics success.
- Candidates who are proficient in at least one programming language and have had exposure to working on statistical packages.

Industry Engagement

The program is designed with meticulous inputs and insights from leading industry practitioners regarding program curriculum, case studies, analytical methodology, data sets, business problem and analytical projects to align Program to the industry requirements.

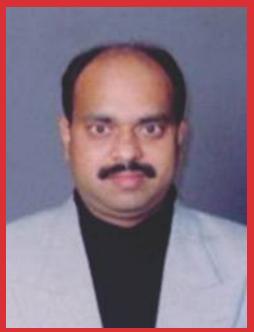
A key highlight of the program is the “Capstone Analytics Project”, fostering solid industry-academia partnership. Through the project, students would need to identify a dataset, business problem and a comprehensive analysis that results in a detailed report and presentation which highlights their learning and findings, methodology followed and implications for business.

Pedagogy

- The teaching-learning cycle of this highly interactive and lab oriented Master of Technology program in Data Science (Business Analytics) involves a judicious blend of a wide range of pedagogical approaches:
- Classroom lectures by industry experienced faculty involving both business and technology from NMIMS.
- Classroom lectures by leading industry professionals in Business Analytics and related areas.
- All Analytics tools.
- Case studies, Industry research reports.
- Domestic and international exposure to practical business problems and its solution.
- Development and implementing business models for decision making in Business Analytics.
- Frequent interaction with leading industry practitioners and academics in Business Analytics.

A SUPERLATIVE MIX OF PEDAGOGY

PROFOUND. EXPERIENCED. GLOBAL.



Prof. Sarada Samantaray
Associate Dean Academics
Degree: M.Tech (Indian Statistical Institute), Ph.D. (Pursing)
Specialization: Algorithms, Compiler Construction, Software Engineering and Project Management, Business Analytics
Industry Experience: Prof Sarada Samantaray is associated with NMIMS for more than 2.5 years. He has 23 years of experience in IT, telecommunication and automotive industry. His was primarily responsible for technology product development and enterprise systems management. At NMIMS University he is driving Business Analytics and Data Science courses. The University has successfully completed two years into M.Tech. Data Science under his able and effective leadership skill. Prof. Samantaray has conducted multiple Management Development Programs for industry on Business Analytics, Big Data, and Machine Learning

Prof. Prasad Chakrabarti
Professor
M.Tech (Industrial Engg. & Operations Research- IIT Kharagpur), B.E (Mechanical- Calcutta University), CPIM, CSCP, SSBB. Certified in SAP and JDA Supply chain
Specialization: Operations and Supply Chain Analytics
Industry Experience: Prof. Prasad Chakrabarti has 18 years of Executive experience at senior level in Planning, Logistics, Supply Chain Management and ERP (BPCS/BaaN) /ISO 9000 implementation in TELCO, ICI Paints and Usha Siam Steel and Indo Rama, Thailand and Singapore. He has more than 15 years of teaching experience in the field of OM/Logistics/SCM/Operations Research with top management institutes in India. Conducted several executive Development Programs and training programs for many top organizations. He has been a member of board of studies (BOS) of many reputed management colleges/institutes.

Dr. Pankaj Sahay
Associate Professor
Ph.D. (Mathematics- IISc Bangalore), MSc (Physics- IIT Kanpur)
Specialization: Probability, Stochastic Control, Analytics & Decision Sciences IPR, Standardization & Policy

Industry Experience: Worked 15+ years in the IT & Telecom Industry in different roles – R&D, Project Management, Intellectual Property Management. Advised Senior Management in Infosys on Standardization & Policy. He has participated as a speaker at various International Conference on Technology & IPR, Standardization. Instrumental in setting up the entire Innovation & IP infrastructure in a Telecom company. Worked with Govt & Industry organizations for Standardization & Policy.

Prof. Siba Prasada Panda
Assistant Professor
Ph.D. (Thesis submitted- University of Hyderabad), M.A. & M.Phil. (University of Hyderabad)
Specialization: Financial Econometrics & Business Analytics, Business Economics,

Industry experience: 8 years of experience in Quantitative Trading strategies for Interest Rate, Commodity, Energy and Index Future Market in a leading prop-trading desk.

Industry Experience: Prof. Siba Panda is associated with NMIMS University for more than 4 years. He has 8 years of industry experience in Quantitative Trading strategies for Interest Rate, Commodity, Energy and Index Future Market in a leading prop-trading desk. Developed various trading strategies for derivative products, fixed income securities, commodity market, which could help companies earn substantial revenue through use of these strategies. He has more than 5 years of teaching experience in the field of Business Analytics, Statistics and time series analysis, Business economics, data modeling. Prof. Panda has conducted several Management Development Programs (MDP) for NMIMS and published several papers on various journals.

Dr. Nilambar Mishra
Assistant Professor
Ph.D. (University of Hyderabad), M.A. & M.Phil. (University of Hyderabad)
Specialization:
Financial Risk Modeling & Financial Analytics, Econometrics & Time Series Analysis, Business Analytics

Industry experience: 10+ years of experience in the field of Financial analytics, Financial risk modeling and computation of regulatory capital requirement as per Basel norms, with a leading Indian bank and a KPO.

Industry Experience: Dr. Nilambar Mishra has more than 10+ years of industry and research experience in the field of Banking and Financial analytics. Prior to joining NMIMS, he was working with a leading private sector bank in India and a KPO. He was part of the risk analytics division of the bank. He was responsible for modeling different types of risks through various statistical techniques and computation of regulatory capital for the bank. His research interests include modeling various financial risks, such as credit, market and operational risks using various statistical techniques. He has participated in several seminars and workshop on analytics and risk management. He has also provided training to the risk management professionals on several occasion. Dr. Mishra was a visiting Professor at NMIMS for more than a year prior to joining the University.

INDUSTRY SPEAKS

If you are thinking Big Data is future…, you are already late, as Big Data has started happening in India.
Shri Jayaram Sridharan
President Retail Banking, AXIS Bank

Students need to translate Business Problem to either a statistical or a mathematical problem, to solve and then back integrate to business problem solution.
Shri Rajeev Jorapur
VP, Management Information System, BAJAJ Auto

STUDENT TESTIMONIALS

I would attribute my success majorly to the myriad opportunities of growth that MPSTME provided me in pursuing my career in Data Science.
Subjects covered during course work are more focused towards concepts as well as case studies. It helped me to understand the basics with much ease. Being from an engineering background did not limit me only to the technical knowledge during my course work here but MPSTME also gave the opportunity to learn elective subjects of different domains in Finance, Marketing etc.
MPSTME's strong linkages with the industry, gave us immense opportunities to learn from the industry experts which helped us to know and understand the recent trends in industry. The highly experienced faculty had always encouraged and guided us to explore our potential and learning capabilities in every academic domain of our interest.
Harshil Gandhi - Fall Batch 2015

After doing my Bachelor's in Computer Engineering from Australia, I got to work with loads of data but could not find any course in India geared towards Data Science to continue my education.
I'm extremely grateful that I finally got the opportunity to get enrolled in this unique programme offered by MPSTME and get access to the best tools and resources in the market.
Saiyed Kashif - Fall Batch 2015

I feel this course was the best decision to start my Career in Analytics.
MPSTME, M.Tech Data Science course is a unique programme different from other M.Tech specializations in a way that it is focussed not only on theoretical but practical implementation of knowledge through various case studies. The strong Statistics base and the Industry standard tools for Analytics made us efficient and competent enough to make a smooth entrance in the Analytics Industry and excel in this domain.
The faculty at MPSTME is very supportive and encourages to achieve and master our analytic skills. This course has been designed to benefit both the graduates and the working professionals.
The strong knowledge of Big Data Technology and domain specific (Marketing and Financial Analytics), made us proficient with the existing and upcoming Industrial trends.
Amrita Parab - Fall Batch 2015

Masters in Data Science was an excellent course consisting of statistics, machine learning, core technical aspects with a lot of it's business applications. It gave me an enormous learning from outstanding faculties and constant industry exposure. Throughout the course work I had a very good exposure to the live projects from industry, and to solve some real time business problems and provide analytical solutions to it.The full-time internship with one of the largest private sector banks in India gave me an enormous hands-on experience in the domain of Financial Analytics and Statistical Modelling, which gave me a strong profile to develop myself as a statistical modeler.
Mr. Sushant K.

There is huge demand of Data scientist in the coming future to analyze the massive amount of data and make the valuable insight out of it .All though Data science can be applied to different fields I want to use my skill of data science and BIG data Analytics in the field of digital marketing ,with continuous increase in the digital ecosystem we have millions of impression that can be used for identifying target audience and programmatic marketing .
This course help me understand the advance statistics and how they an impact the business,with hands on experience on the tools like SAS and R we were able to enrich our analytical coding skills and with big data architecture we are able to handle the huge amount of the data and able to apply the machine learning algorithms on it.
During my Internship at AXIS BANK I got industry experience in the Big data ecosystem and we have done some good projects on it like Customer 360 and campaign management .
Mr. Gunjan Dadhich

Strong Linkages & Official Affiliations with Corporate, Government Organisations & International Universities

ADVISORY COMMITTEE
INDUSTRY
Mr. Balaji N, Executive VP, Business Intelligence Unit, AXIS BANK
Mr. Rajeev JORAPUR, VP MIS, Bajaj Auto
Amul DESAI, Director, SAS
Mr. Vinay Kumar MUNDEWADI, VP, Accenture
Mr. Satish MITTAL, SVP, Technology, Vodafone
Mr. S. SRIRAM, VP, IBM
Mr. Anil GIDH and Divvya SIPPY (VP, CAP GEMINI)
Mr. Dhananjay KUMAR, CEO SHEZERTEC Consulting

Academic:
Dr. Bala BALACHANDRAN Distinguished professor from Kellogg North Western University - An distinguished academician from outside University.
Dr. Sandhya Karpe

INDUSTRY RELATIONS

AXIS BANK

accenture

IBM

CENTRUM
Your aim is our only target

YPoint

sas
THE POWER TO KNOW.

BAJAJ
Distinctly Ahead

महाराष्ट्र शासन
विकीकर विभाग

SVKM'S
Narsee Monjee Institute of Management Studies
(Declared as a Deemed-to-be University under Section 3 of the UGC Act, 1956)
V.L. Mehta Road, Vile Parle (W), Mumbai - 400 056, India
T: (022) 4235 5555 | E: enquiry@nmims.edu

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Deemed to be UNIVERSITY

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