

M.Tech  
Data  
science &

DIGITAL  
TRANSFORMATION



protiviti®  
*Global Business Consulting*



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# An Introduction to the Program

JIS University and Protiviti Member Firm for India have developed a program that is both specialized and advantageous. It provides students a fantastic opportunity **by giving them a full-time job and a Master's Degree** that allows candidate to build expertise. The program's uniqueness stems from the great demand for data science and digital transformation on the job market and its promising career possibilities. A degree earned while working full-time over the period of three years. This course offers the chance to the students to **start working from day one** and this is the one-of-a-kind opportunity especially offered by us throughout the country. This is a wonderful opportunity for career-centric students to ensure a successful future.

This engaging course will teach students how to use mathematics, statistics, and the scientific method to solve problems. For reviewing and preparing data, use a variety of tools and approaches, ranging from SQL to data mining to data integration methodologies, understand how to use Data Visualization with Artificial Intelligence (AI), such as Machine Learning and Deep Learning models, to extract insights from data. Learn to write applications that automate data

processing and calculations, as well as tell and depict stories that clearly communicate the meaning of outcomes to decision-makers and stakeholders at all levels of technical competence. They can also explain how these findings might be applied to commercial issues. Learners will discover how data science may be used in a variety of fields and how data analysis can be used in making data-driven decisions.

M.Tech in Data Science & Digital Transformation is a specially designed approach to deriving relevant insights from today's organizations' huge and ever-increasing volumes of data. This is an excellent opportunity as data scientists are in high demand.

JIS University's M.Tech in Data Science & Digital Transformation, offered in conjunction with Protiviti, will provide you with the essential basic skills that each data scientist requires, preparing you for a job in data science or further advanced study in the discipline. This specialization will provide you with the foundation for additional advanced studies to help you achieve your career objectives. Put your knowledge into practice with real-world data sets and digital transformations.







## Chancellor's **MESSAGE**

**Taranjit Singh**  
JIS University

Education is not a product, but a service that contributes to building society. As educational professionals, it is our responsibility to see what students need and to provide them with it so they can achieve success. In the modern era, technology has an impact on almost everything, starting from scientific research to health development, banking, transport, communications, and much more. It is one of the most popular profession choices among today's youth.

We, at JIS, have launched an M.Tech course in Data Science & Digital Transformation in collaboration with Protiviti Member firm for India. This professional program allows students to work and learn at the same time. The course content has been expertly crafted to meet the needs and demands of the computer science industry. I am glad that we have been able to come up with a unique initiative where students can study and work at the same time. This effort intends to give students real-world experience and preparing them for the challenges of the corporate world.



## Vice-Chancellor's **MESSAGE**

**Indranil Sengupta**  
JIS University



Welcome to JIS University, one of the fastest-growing private universities in Eastern India. As part of the much larger JIS Group, we are dedicated to academic excellence and helping students achieve their goals. Recent advances in information and communication technology have completely transformed our way of life and how we communicate with one another. Indeed, we are in the midst of a digital change that is making the world a much smaller place.

The M.Tech. in Data Science and Digital Transformation program, which is being offered from the next academic session, intends to build a workforce of well-trained professionals who will be well-equipped to address society's needs. The students who would be graduating can apply their expertise in various interdisciplinary areas and prove to be valuable in moving the nation forward.

# About JIS University

JIS University was established in February, 2015. The University's objective is to provide the best services for students, researchers, and faculties. JIS University students can expect a high-quality education because all courses are authorized and affiliated with the University Grants Commission (UGC) in New Delhi. JIS University is affiliated and recognized by the University Grants Commission (UGC), All India Council of Technical Education (AICTE), Pharmacy Council of India (PCI), National Council for Teacher Education (NCTE), Bar Council of India (BCI) and Scientific and Industrial Research Organization (SIRO). JIS University is also a member of the Association of Indian Universities (AIU) since 2017 and the United Nations Academic Impact.

In today's world, education has evolved to meet industry needs, necessitating the development of instructional approaches that meet these needs. The Learning Management Systems (LMS) that JIS University has implemented will help to develop future professionals who are committed to societal reform. JIS University contributes to the advancement of higher education, research, entrepreneurship, and skill development by combining conventional teaching and learning

techniques with current technology-enabled teaching and learning practices, as well as Research and Development.

JIS University's mission is to provide instruction, teaching, training, and research in the domains of science, engineering, technology, pharmacy, management, law, social sciences, and education. Besides the traditional undergraduate and postgraduate courses, there are integrated courses like BBA-LLB (H) is also available. The university also offers Ph.D. degrees in a variety of fields. Students are exposed to international student internships and foreign language classes through various student exchange programs with foreign universities. For the promotion of intrapreneurship, employability, and self-employment, the University always encourages students to engage in entrepreneurship and skill development.





# HIGHLIGHTS OF JIS UNIVERSITY

- Governing Body Members are from Industry and Academia.
- Computer lab and classroom with advanced technology
- State-of-the-art Infrastructure with a Wi-Fi-enabled and Eco-friendly campus with a well-stocked library, spacious seminar hall, conference hall, and smart classroom.
- Educated and skilled, industry-experienced, and trained faculty members provide a world-class educational environment.
- Strategic tie-ups with CII, FICCI, BCCI, IACC, TIE, IGCC, CEGR, NASSCOM, etc.
- Coursera's collaboration with JIS University gives students the benefit of taking one course per semester for no additional charge.
- Nurturing innovative skills among students with the help of the Entrepreneurship Development cell and Technology and Business incubation through AICTE-MHRAD IIC.
- Students receive hands-on instruction through regular industry and field visits.
- Education through comprehensive online Digital Knowledge Repository with video and audio lectures on all subjects.
- Students are supplied with top-notch hostel accommodations.
- Research and Development activities and collaboration with other reputed institutions would enhance students' academic careers.
- Students' general growth is ensured through extracurricular activities such as debates, quizzes, speeches, theatre, photography, and NSS.







## Managing Director's **MESSAGE**

**Amit Ray**

Protiviti Member Firm

“Protiviti is a global consulting firm on a mission to become the most trusted advisory brand in the world. Our core values; innovation, inclusion and integrity foster an entrepreneurial environment where you can chart your own course. Our people seek to make a positive impact on our clients, our firm, and the communities in which we live and work. We are incredibly passionate about building the next generation of professionals through our learning and development programs. In a fast changing and a VUCA world traditional curricula and teaching methods fall short. This program combines the best of academia, industry, innovation ecosystem of technology startups and business leaders to deliver the course curriculum - all this, while you are working on real business problems which make a difference to the world around us. In one of a kind integrated work and learning program Protiviti and JIS Group brings a unique opportunity for Engineering and Science graduates to differentiate themselves and stay ahead of your peers.

Experience tells us that no one competency is enough to solve today's complex business problems. That is why we focus on developing well rounded professionals providing adequate exposure across multiple domains spanning technical, industry, business and soft skills so that they can team with our clients and deliver a bespoke solution to fulfill their requirements. At Protiviti, we offer you the chance to grow and achieve your goals both professionally and personally. We are devoted to ensuring that our employees work in an inclusive environment where you can lead, learn, and make a difference.

This is an opportunity like no other, what are you waiting for? Come, “let’s put a dent in universe!”

## About Protiviti

Protiviti is a global consulting firm that delivers deep expertise, objective insights, a tailored approach, and unparalleled collaboration to help leaders confidently face the future. Protiviti and its independent and locally owned Member Firms provide clients with consulting and managed solutions in finance, technology, operations, data, analytics, governance, risk and internal audit through its network of more than 85 offices in over 25 countries.

Named to the 2022 Fortune 100 Best Companies to Work For® list, Protiviti has served more than 60 percent of Fortune 1000® and 35 percent of Fortune Global 500®

companies. The firm also works with smaller, growing companies, including those looking to go public, as well as with government agencies. Protiviti is a wholly-owned subsidiary of Robert Half (NYSE: RHI). Founded in 1948, Robert Half is a member of the S&P 500 index.

[www.protiviti.com](http://www.protiviti.com)





## HR's Message

Protiviti strives toward having the best people and culture within the organization. We seek talented people of diverse backgrounds and experiences who can innovate and achieve exceptional work through our recruiting process. We want people who strive to be their best every day, with every action or interaction. The Protiviti career experience enables our people to become high-impact professionals, but more importantly, to become successful individuals in work and life in all the ways that matter to them.

## Awards & Recognition

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At Protiviti, we understand that our work product is only as good as our people. Luckily, we happen to have the best people in the industry. As a result, the awards validate our belief that Protiviti does stand out among its peers as an exceptional workplace to build a career.

- One of Fortune Magazine's 100 Best Companies to Work for (2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022)
- One of the Top 15 Best Firms to Work for — Consulting Magazine (2014, 2015, 2016, 2017, 2018, 2019, 2020)
- Named 'Best to Work For' by Glassdoor (2018)
- Best Security Consulting Services Partner' at the CISO50 & Future Security Awards 2021 by Tahawultech

## Career Growth

As a learning organization, Protiviti provides wide and open access to resources to help our people develop. In addition to everyday experiential learning, we offer several formal development opportunities to ensure that our people can advance their careers and themselves in significant ways.

We firmly believe in recognizing talent. With this in mind, Protiviti also has a Rewards and Recognition program designed to identify individuals for exceptional contributions towards clients, project delivery, and talent development.



## Testimonials



**Mr. Chitrabhanu  
Mukherjee**

Director - Data & Analytics  
Protiviti Member Firm for India

Having worked with 5 varied and diverse organizations from across geographies for the last 18 years, I have gained a clear perspective about the challenges and opportunities that an organization can offer its employees. Protiviti is a very employee-friendly organization that provides its employees all the support they need to flourish in their professional careers. The friendly attitude of peers and the considerate attitude of the management helps team members overcome hurdles and grow in a holistic manner. The flexibility the organization offers also inspires them to give their best. Last but not least, it is a fun place to work.



**Mr. Kallol Kumar**

Director, Data & Analytics  
Protiviti Member Firm for India

As the Greek philosopher said, “Change is the only constant”. My aim of switching job from a global captive organization to a consulting firm was to challenge my abilities in the domain I work. I could not have succeeded without the support of Protiviti team. The firm provides a great platform not only to nurture entrepreneurship capabilities but also to learn and deliver new things every day. With the continuously changing landscape in the data science domain, the organization offers ample support and growth opportunities to accomplish the milestones. Working with talented people and continuous guidance from Protiviti leadership has made my journey exciting and memorable. I am proud to be a part of the Protiviti family and it is really a great place to work.



# Job Description

**Practice:** Data Analytics & Digital Transformation

**Role:** Consultant

## Key Responsibilities:

- Responsible for possessing Python, R, SAS, and SQL coding skills.
- Working with tools such as Excel and Powerpoint as well as PowerBI, Tableau, Microsoft Azure, SAP, and ETL platform by understanding its architecture and usage.
- Responsible for organizing problems and solving those using analytics, as well as having significant commercial acumen garnered through experience in a range of areas and functions.
- Responsible for determining customer needs and completing projects in accordance with their needs.
- Excellent communication and analytical skills for converting business challenges into an analytically solvable framework and then converting sophisticated analytics results into simple, understandable, and actionable business insights for senior management.
- Qualified for focusing on customers, working as part of a team, and completing duties on schedule.





# Why Master's in Data Science & Digital Transformation?

## Vision Statement

Build a strong research and teaching environment towards meeting the future needs of the nation.

## Mission Statements

- Provide academic excellence through quality teaching-learning methods and train students to apply their knowledge to solve real-world problems.
- Enhance the potential of the students towards career paths with the high quality foundation in ethics and critical thinking.

## Programme Educational Objective

- Achieve the understanding of the basics and emerging techniques of a broad range of computer science and engineering concepts.
- Gain the ability to analyze and solve computational problems through the application of fundamental knowledge of mathematics, science, and engineering.
- Learn to apply modern skills, techniques, and engineering tools to create next generation Computational Environments.

## Programme Specific Outcome

- Attain the ability to design and develop applications and software based systems, evaluate and recognize potential risks and provide creative solutions.
- Gain knowledge in technological diverse areas of Computer Science and experience, an environment conducive to cultivating skills for a successful career, entrepreneurship and application knowledge in higher studies.

## Program Flow

**Name:** M.Tech in Data Science & Digital Transformation

**Duration:** 3 Years (6 Semesters)

## Eligibility Criteria

**B.Tech. / B.E.** (with minimum 60% marks or equivalent CGPA) in any engineering discipline.

or

**MCA** (with minimum 60% marks or equivalent CGPA)

or

**M.Sc** (with minimum 60% marks or equivalent CGPA) in Computer Science/ Electronics & Communications.



# Programme Curriculum

## SEMESTER 1

Code	Course Name
PDS1001	Data Visualization with AI
PDS1002	Intelligent Process Automation
PDS1003	Data Science and Analytics
PDS1101	Data Visualization & AI Lab
PDS1102	Intelligent Process Automation Lab

## SEMESTER 2

PDS2001	Data Privacy and Security
PDS2002	Data Governance and Quality
PDS2003	Web Technology
PDS2101	Data Governance & Quality Lab
PDS2102	Web Technology Lab

## SEMESTER 3

PDS3001	Elective 1
PDS3002	Advance Data Science and Analytics
PDS2003	Advance Data Science and Analytics Lab
PDS2101	IPR and Copyright Filing

## SEMESTER 4

Code	Course Name
PDS4001	Data Management
PDS3002	Enterprise Data Mining and Processing
PDS2003	Data Management Lab
PDS2101	Enterprise Data Mining and Processing Lab

## SEMESTER 5

PDS5001	Elective 2
PDS51001	Thesis with Seminar 1
PDS2101	Case Study with Analytics Seminar 1

## SEMESTER 6

PDS61001	Thesis with Seminar 2
PDS6101	Case Study with Analytics Seminar 2

# Elective Pool

Sl. No.	Course Name
1.	Business and Functional Analytics - Audit Analytics, Finance Analytics, HR Analytics, etc.
2.	Scientific Computing with Python
3.	Data Assessment and Advisory
4.	Social and Web Media Analytics
5.	Mobile Computing
6.	NLP and Conversation AI
7.	Blockchain Technologies
8.	Optimization Techniques
9.	Speech and Signal Processing
10.	Applied Statistics
11.	IoT and Cloud Computing
12.	Data Administration and Support - Tool administration, configuration, sizing, help desk, etc.



# Labs & Tools

- Data Visualization - Power BI, Tableau, Qlik
- Intelligent Process Automation (RPA / PM / Workflow)
- Data Management 1: PLSQL + (Oracle, PostgreSQL, MySQL, SQL Server, Data Modeling) + DQ + MDM
- Data Science & Analytics 1: Probability and Statistics, Performance Management - Financial planning, budgeting & Consolidation
- Web Technology (UI/UX / Javascript / HTML / CSS )
- Low Code Platforms (Outsystems / Power Platform)
- Data Science & Analytics 2: AI/ML, NLP
- Data Management 2: Data Warehouse & Cloud Data Platform (BDM / Azure / AWS / GCP / Snowflake / SAC)
- Advanced Web Technology (Node / Angular / React / .NET )
- Low Code Platform Lab
- Machine Learning Lab
- App Tech Lab
- Enterprise Data Governance - Lineage + Catalog + Stewardship + Advanced DQ + Advanced MDM
- Business & Functional Analytics - Audit Analytics, Finance Analytics, HR Analytics etc
- Data Privacy & Security (Data, Information & IT Security)
- Social and Web Media Analytics
- Mobile Computing
- NLP & Conversation AI
- Blockchain Technologies
- Speech and Signal Processing
- IoT and Cloud Computing
- Data Administration & Support - Tool administration, configuration, sizing, help desk, etc.



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