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**LIVE**

Sessions by IIT Jodhpur  
Faculty with in-campus  
immersion

# IIT JODHPUR

## Post Graduate Diploma in **Data Engineering & Cloud Computing**

12 Months

IIT Jodhpur Alumni Status\*

Powered by

**WileyNXT**

# ABOUT

## Post Graduate Diploma in Data Engineering & Cloud Computing

Developed by IIT Jodhpur in collaboration with industry proponents, the 12-month intensive program weaves together academic lectures from top faculty from IIT Jodhpur, hands-on practical sessions, assignments and capstone project to provide as experiential learning in Data Engineering with a focus on Cloud Computing.

In these 12-months, the students are expected to master the key technologies involved in generating insights from data that solve complex social and business challenges of today's world. In this program, the students will imbibe the technologies and methodologies to manage the complete lifecycle of a data engineering project - from big data collection to insight generation using machine learning techniques.

Also, they will deploy models on the cloud to gain the real-world experience of developing, deploying, and administering data applications on the cloud. A capstone at the end of program will help crystalize the students' knowledge where will showcase their mastery over tools and technologies of data and cloud, and prove they are ready to face any challenges in the industry.

# WHO

## Is this program for?

- If you are aspiring for a high growth career in Data Engineering and Cloud Computing, this program provides you with the right knowledge, tools, prestigious IIT PG Diploma credential to help you succeed.
- For aspiring and current software, and technology professionals, this PG diploma program helps hone high in demand skills such as big data engineering, cloud computing, and machine learning.

# WHAT

## is the criteria of eligibility?

The eligibility criteria prescribed below are the absolute minimum with no possible exceptions:

- (i) The applicant must have a bachelor's degree in engineering or science (4-year program) or a master's degree in science, MCA, or in a related field.
- (ii) A minimum of 50% marks in UG/PG or a minimum CGPA of 5.0 on a scale of 10 with corresponding proportional requirements when the scales are other than 10.
- (iii) The applicant must be a working professional with a minimum of two years of work experience (after qualifying degree) in industry/R&D laboratories/Academic Institutions at the time of registration to the program.
- (iv) The applicant must qualify for the written test conducted by IIT Jodhpur or its appointed partner.

# WHAT

## will you learn in 12 months of the PG diploma program



Work in Python environment, read data into data structures, read-write into files, clean and analyze data to obtain valuable insights.



Design databases, and views using adhering to modern database management principles.



Understand and explain big data, characteristics, concepts, life-cycle, and ecosystem, and technical understanding of data structures for Big Data.



Design and implement appropriate storage and processing technique for every type of big data.



Develop cloud deployment strategy for a big data application and implement it successfully.



Use supervised and unsupervised learning techniques to derive insights from big data.



**The Big Data and Data Engineering Services market size is estimated to grow at a **CAGR of 18%** during the forecast year from 2021 to 2027.**

*Source: <https://www.researchandmarkets.com/>*



# Program Curriculum

## Trimester I: Foundation courses (10 credits)

Classes Begin: 30 July 2022 | Classes End: 22 October 2022

Exams: 29 to 30 October 2022 | Break: 31 October 2022, 11 November 2022

### Linear Algebra for Big Data

- To understand various matrix computations and their applications in big data analysis.
- To use numerical linear algebraic methods and use them to carry out data analysis.

### Statistics for Data Engineering

- Gain the basic knowledge of probability theory and descriptive statistics;
- Perform hypotheses testing and estimation of the parameters for a given parametric family of distributions;
- Gain the basic knowledge of regression analysis and its application in modelling of real data sets.

### Python Programming for Data Engineering

- Use the basic elements of computer programs, such as, statements, variables, events, conditionals, loops, arrays, and write programs.
- Solve problems with software tools.

### Databases and SQL Programming

- Apply different data modeling methods to requirement analysis, design, and implementation of database systems.
- Deduce normalized forms for efficient relational database design.
- Use appropriate storage and access structures.
- Use techniques for transaction management, concurrency control and recovery

## Campus Immersion Sessions - 10 Days

### Please Note:

- *\*Class dates, schedules, modules, projects, labs and case studies are subject to change based on IIT Jodhpur's discretion, students will be informed of the final curriculum during orientation.*
- *Campus immersion agenda will be provided before the immersion sessions.*
- *Campus immersion is subject to covid-19 advisory as per Govt. of India.*

# Trimester II: Data Engineering (14 credits)

Classes Begin: 12 November 2022 | Classes End: 5 February 2023

Exams: 11 & 12 February 2023 | Break: 13 to 24 February 2023

## Big Data Retrieval and Integration

- Explain modern big data technologies, computing environments & ecosystems, differentiate between trivial and big data, and conceptualize big data systems.
- Articulate examples of real-world use-cases for big data in businesses across a variety of industries.
- Appreciate how the characteristics of big data have changed traditional organizational workflows.

## Big Data Systems and Platforms

- Evaluate appropriate cloud solution for big data application
- Develop cloud deployment strategy for a big data application and implement it successfully

## Big Data Management

- Evaluate appropriate cloud solution for big data application
- Develop cloud deployment strategy for a big data application and implement it successfully

## Electives/Specialization

- a. Retail Analytics b. People Analytics c. Financial Analytics d. Digital Financial Services
- e. Digital marketing Analytics f. Social Media Analytics g. Qualitative Analytics for Business

# Campus Immersion Sessions - 10 Days

## Certification

- *On completion of Trimester I and II and passing the subsequent examination, the learner will be awarded certification for Data Engineering.*
- *This partial certification is not a PG diploma. PG Diploma Certificate will be awarded on completion and passing examinations for all three trimesters.*
- *This is a stackable program. Students may opt to complete only part of the certificate as per their will. However, Trimester I will be mandatory for all.*
- *Please get in touch with your program advisor for partial program fee details and refund policy.*

# Trimester III: Cloud Computing (12 credits)

Classes Begin: 25 February 2023 | Classes End : 21 May 2023

Exams : 27 to 28 May 2023 | Final Results/Break: 10 June 2023

## Fundamental of Cloud Computing

- Designing, deploying and managing distributed systems
- Understanding and analyzing various distributed algorithms and approaches

## Fundamentals of Distributed Systems

- To formulate a machine learning problem
- Select an appropriate pattern analysis tool for analyzing big data.
- Use supervised and unsupervised learning techniques to derive insights from big data.

## Machine Learning with Big Data

- Explain big data storage approaches and techniques.
- Design and implement appropriate storage techniques for every type of big data.
- Deploy data mining techniques to discover insights from big data.
- Design and implement workflow to process streaming or batch data.

## Mini Project

- Understand the shifts in people management practices and growing emphasis on evidence based decision making with in hiring, performance assessment, retention among other decisions pertaining to people within organizations
- Develop hands on understanding of the mechanics of using data-analytic techniques in making people management decisions.

## Campus Immersion Sessions - 10 Days

## Certification

- *On completion of Trimester I and III and passing the subsequent examination, the learner will be awarded certification for Cloud Computing.*
- *This partial certification is not a PG diploma. PG Diploma Certificate will be awarded on completion and passing examinations for all three trimesters.*
- *This is a stackable program. Students may opt to complete only part of the certificate as per their will. However, Trimester I will be mandatory for all.*
- *Please get in touch with your program advisor for partial program fee details and refund policy.*



# Tools & Technologies



# Experience IIT Learning in Action with Campus Immersions

Visit the IIT Jodhpur campus for 10 Days, every trimester for Immersion sessions and examinations.



# In-Campus Immersion at IIT Jodhpur

Campus immersion will be an essential element of the program, in which learners must attend the campus activities and sessions during that immersion period. Campus immersion attendance is mandatory to earn the program certificate. Learners will get a classroom experience, with the opportunity to meet and discuss with the esteemed faculty at IIT Jodhpur. However, it will be subject to cancellation/postponement based on future emergency circumstances/covid-19 advisory as issued by the government of the India

Learners must come for 10 days at the end of each trimester, if and only if the situation is conducive to covid-19 regulations/advisory.

## Please Note:

- ◉ Campus immersion agenda will be provided before the immersion sessions.
- ◉ Learner accommodation will be subject to the availability of hostel space. Nominal charges may apply for accommodation. The immersion fee and program fee do not include food and lodging charges.
- ◉ The Information related to the learner Identity card will be provided before the immersion.



# Program Directors, IIT Jodhpur



## Dr. Gaurav Bhatnagar

Associate Professor  
Department of Mathematics  
Indian Institute of Technology Jodhpur

Dr. Bhatnagar has spent four years as a Post-doctoral Research Associate at University of Windsor, Canada. He has received a PhD in interdisciplinary area of Applied Mathematics and Computer Science and an MSc in Applied Mathematics from the Indian Institute of Technology Roorkee, India, in 2010 and

2005, respectively. His research interests lie in the broad area of wavelet and fractional transform theory, with applications in digital watermarking, encryption techniques, biometrics and mathematical image analysis. Dr. Bhatnagar is the author of over 80 scholarly publications. He is a member of several professional bodies, including IEEE and ACM.



## Dr. Dip Sankar Banerjee

Assistant Professor  
Department of Computer Science and Engineering  
Indian Institute of Technology Jodhpur

Dr. Dip Sankar Banerjee is an Assistant Professor at Indian Institute of Technology Jodhpur. His research interests include High Performance Computing, Data Mining & Analytics, Computer Architecture & VLSI Design, and Middleware Design

## Program Architects, WileyNXT



### Sasanka Panda

CTO | Intelligent Automation  
Transformation | Analytics @Capita

## Masterclass Faculty



### Saraswathi Ramachandra

Director, Citibank

\*Masterclass and Expert Faculty is subject to change as per the availability/schedule.

# POSTGRADUATE Diploma From IIT Jodhpur

*with academic credits*

Certificate No.:



**Indian Institute of Technology Jodhpur**

Your Name

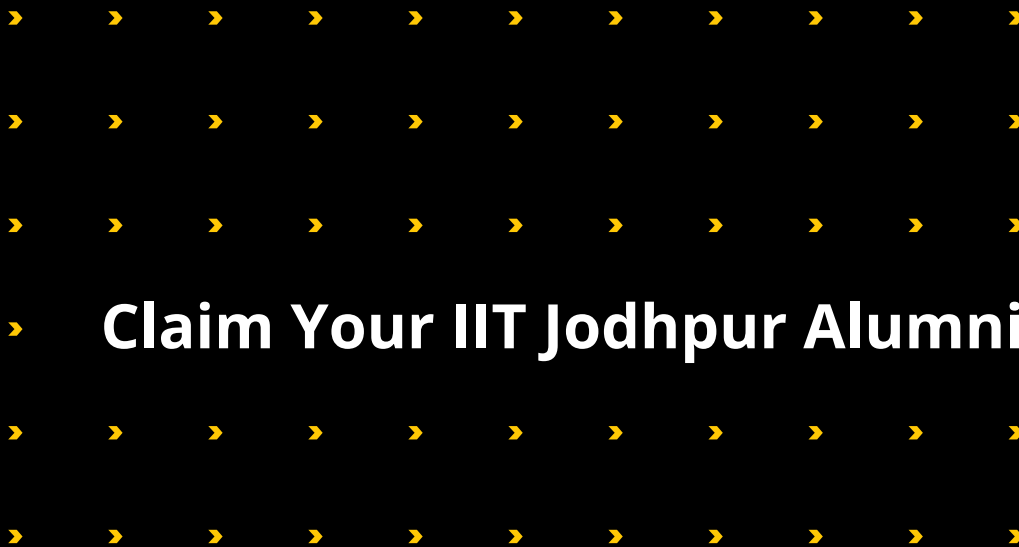
Enrolment Number

**PG Diploma in  
Data Engineering and Cloud Computing**

March 2022 to March 2022

Course Coordinator  
IIT Jodhpur

Chairman, Senate  
IIT Jodhpur



**Claim Your IIT Jodhpur Alumni Status\***



**Data Engineers, who are largely responsible for building out and maintaining data infrastructure (including the storage, movement, and cleaning of data), **increased salary by 4.7 per cent**, from \$113,249 in 2019 to \$118,621 in 2020.**

**Salary for Cloud Engineer roles **grew 6.3 per cent** from 2019 to an average salary of \$136,479, underscoring the increasing importance and ubiquity of the cloud.**

*Source: Dice 2021 - Tech Salary Report*



# #LearnToWin

## Career Assistance

While WileyNXT Programs ensure to whet the winning edge in you, our #LearnToWin Career Assistance helps you get closer to the right opportunity. This is a unique Career assistance plan where you get to highlight your WileyNXT and Top Tier Institution Joint Certifications to your prospective employers. And that's not all, this Career assistance plan comes with a plethora of benefits.

### Pro-membership on iimjobs.com

- Job Insights: Access to "Insights" helps you compare your application against all other applications received for a specific job
- Recruiter Action Status: The ability to view the status of job applications whenever a recruiter takes any action
- Follow-up: Candidates get access to one follow-up per week to a job they have applied to. If not used will be carried forward onto the next week
- Chat feature: Initiate chat with the recruiter who has shortlisted your application
- Improved Visibility: Start icon to improve the visibility of the account

### Spotlight on iimjobs.com and hirist.com

- Candidates' profile pushed among the list of applicants for jobs applied that align with acquired certification
- Profile highlighted with institute's/certifying body's name at the recruiter interface
- A particular set of keywords provided on iimjobs for the candidates to have highly relevant job feeds.
- Improve Candidates' Relative Rank by 30-40%. The highest-ranked candidate appears at the top to the recruiters.

### Pro-Features on hirist.com

- Job Insights: Access to "Insights" helps you compare your application against all other applications received for a particular job
- Recruiter Action Status: The ability to view the status of job applications whenever a recruiter takes any action
- Follow-up: Candidates get access to one follow-up per week to a job they have applied to. If not used will be carried forward onto the next week
- Chat feature: Initiate chat with the recruiter who has shortlisted your application

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### Terms and Conditions

- #LearnToWin Career Assistance does not guarantee any jobs/interviews. The above services are made available on iimjobs.com and hirist.com. These are industry targeted select job seeker portals to help you reach the relevant employers.
- This assistance plan is a complementary offering to learners of select courses/programs.
- This plan helps candidates highlight their resumes and profile to prospective employer, that improve job search experience and profile visibility on the recruiter side.
- iimjobs.com is not related to any IIM B-Schools. Both are separate and independent entities.
- The #LearnToWin Career Assistance plan is valid for 12 months as the period for an applicant to apply for Jobs from the date of plan activation.
- A 10-day time period would be given to every learner (of select programs only) for registration before the services are activated.

# Key Information

Admission Closure date	7 August, 2022
Class Start Date	14 August, 2022
Program Duration	12 Months   600+ Learning Hours
Class timings	The majority of classes will be held on Saturdays and Sundays. Few of the classes will also be held on weekdays (after work hours). <i>*subject to rescheduling in case of unforeseen circumstances or public holidays</i>
Program Fee	Certificate Course Fee: INR 2.39 Lakhs + Immersion fee PGD Course Fee: INR 2.99 Lakhs + Immersion fee <i>**Last date of enrollment: 15 July, 2022</i>
Eligibility <i>(The criteria prescribed here are the absolute minimum with no possible exceptions)</i>	<p>The applicant must have a bachelor's degree in engineering or science (4-year program) or a master's degree in science, MCA, or in a related field.</p> <p>A minimum of 50% marks in UG/PG or a minimum CGPA of 5.0 on a scale of 10 with corresponding proportional requirements when the scales are other than 10.</p> <p>The applicant must be a working professional with a minimum of two years of work experience (after qualifying degree) in industry/R&amp;D laboratories/Academic Institutions at the time of registration to the program.</p> <p>The applicant must qualify for the written test conducted by IIT Jodhpur or its appointed partner.</p>
Campus Immersion	<p>Campus immersion is mandatory for all the learners to earn the program certificate, 10 Days at the end of each trimester, learners will be notified if there are any changes in the date due to Covid-19 regulations/advisory.</p> <p><b>Note:</b> <i>Immersion fee of INR 10,000 is payable to IIT Jodhpur. The immersion fee is not included in the program fee. Food and lodging charges are not included in the immersion fee.</i></p>
Complimentary Course <i>(Self-paced)</i>	Wiley Certified - Python Programmer



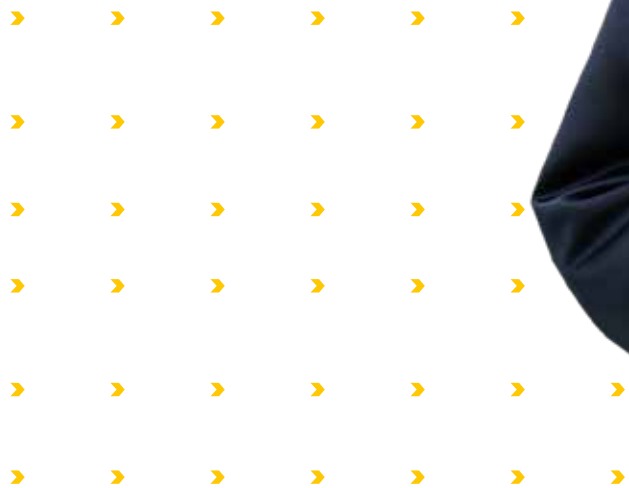
*Complete Your*

# Executive MTech Degree In 1 Year

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All the PG Diploma holders of the Data Engineering and Cloud Computing Program, aspiring to opt for Executive MTech Degree can opt for the same, post completion of PG Diploma in Data Engineering and Cloud Computing Program

For admission process and information for MTech Degree you may write to [pgd\\_decc@iitj.ac.in](mailto:pgd_decc@iitj.ac.in)





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# Indian Institute of Technology Jodhpur भारतीय प्रौद्योगिकी संस्थान जोधपुर



Indian Institute of Technology Jodhpur was established in 2008, to foster technology education and research in India. The Institute is committed to technological thought and action to benefit the economic development of India. Scholarship in teaching and learning; Scholarship in research and creative accomplishments; and relevance to Industry are three driving forces for us at IIT Jodhpur.

IIT Jodhpur functions from its sprawling residential Permanent Campus of 852 acres on National Highway 65, north-northwest of Jodhpur towards Nagaur. This campus is meticulously planned and envisioned to stand as a symbol of academics – simple, but deep.

The Institute is committed to multidisciplinary approach of technology development. Hence, it has established state-of-the-art laboratories for basic research, and has organised its academic degree activities through Departments and its coordinated research through Centers for Technologies.



# WILEY

For over 200 years, Wiley has been helping people and organizations develop the skills and knowledge they need to succeed. We at Wiley, are dedicated to developing efficient learning products, digital transformation education, learning, assessment and certification solutions to help universities, businesses and individuals move between education and employment and achieve their ambitions.

## WileyNXT

Wiley presents WileyNXT — an award-winning and innovative learning solution designed to bridge the skill gap for the jobs of tomorrow.

WileyNXT programs have been designed by Wiley Innovation Advisory Council — a body of 40+ Industry and Academia leaders. Our programs have been developed to build a problem-solving mindset and solve real-world business challenges. Along with conceptual learning, our programs focus on contextual learning with skilling exercises and projects based on real-life business problems. With the Wiley Network and best in class Wiley content and courseware, a WileyNXT learner is all set to step into the future.

## Get The Wiley Edge

4000+

Experts and SMEs  
across the globe



Recognized by  
**Fast Company's World  
Changing Ideas 2020**  
for its outstanding innovations  
in education.

215+

Years of excellence in  
Academia & Research



Recognized as the  
**'Best Corporate Training  
Platform'**  
at Entrepreneur's Innovation  
Education Awards 2022.

33M

Learners across  
the globe



Edtech X Indian  
Education Awards 2021  
(11th National Awards on  
Indian Education)

100%

of World's researchers  
leverage Wiley Journals



Recognised and Empanelled by



Government of Singapore

70+

University  
Collaborations



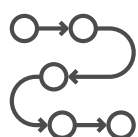
# Admission Process



## STEP 1: COUNSELLING SESSION WITH PROGRAM ADVISOR

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Speak to your program advisor to know if you are the right fit for the program and understand the learning benefits. If you are the right profile and that you decide to apply, your program advisor will share the details.



## STEP 2: PRESCREENING ASSESSMENT

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All interested applicants are required to register their interest and appear for an online MCQ based selection test conducted by IIT Jodhpur in association with WileyNXT. All successful candidates will be duly notified by WileyNXT program advisors to apply for the PG Diploma program.



## STEP 3: SUBMIT APPLICATION

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Applicants shortlisted will be required to submit the online application form, which will be sent as a personalised link to the candidates directly by IIT Jodhpur. Post submission of the form and verification of all required documents, candidates will be notified by IIT Jodhpur to deposit the fee online on IIT Jodhpur portal to complete the admission process.

**Please refer to IIT Jodhpur academic guidelines:**

[https://iitj.ac.in/uploaded\\_docs/Regulation/Academic\\_Regulations\\_Final\\_03\\_09\\_2019.pdf](https://iitj.ac.in/uploaded_docs/Regulation/Academic_Regulations_Final_03_09_2019.pdf)

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### Note:

*Incomplete application form, without the self-attested copies of all relevant Certificates, or application without requisite fee, will be rejected. The responsibility of entries made in the application form lies with the Applicant. Applications without a qualifying test score will be rejected.*

**View the application procedure on IIT Jodhpur Website:**

[https://iitj.ac.in/uploaded\\_docs/ADV\\_MTech\\_MTechPhD\\_2020.pdf](https://iitj.ac.in/uploaded_docs/ADV_MTech_MTechPhD_2020.pdf)

# System Requirement

## For Optimal Learning Experience

Please Note that the following computer and connectivity configuration has worked well for most of our past learners.

Ideally, desktop/laptops bought in last five years will provide adequate hardware, software, and internet connectivity capability to help you enjoy an uninterrupted and pleasant learning experience.

CPU	A multi-core 64-bit CPU with a speed of at least 2Ghz
Operating System	Windows 7 (64-bit) or above, Mac OS 10.7 (64-bit) or above
Memory	8 to 12 GB of RAM
Disk Space	At least 128GB with 50 GB or more free space
Display	At least 13" with HD (1366x768), Full HD (1920x1080), or better resolution
Input	Keyboard, Mouse, or Multi-touch
Power backup	At least 4 hours of uninterrupted power supply
Wireless LAN	Wi-Fi 802.11 a/b/g/n/ac/6 ( For Image proctored exams 1MBPS upload and 1 MBPS of download speed is mandatory, For video proctored exams 2 MBPS upload and 2 MBPS of download speed is mandatory) At least 4 Mbps of Internet speed recommended
Camera	At least 480p or better built-in or USB web-camera
Sound	Speakers and Microphone either built-in or external
Browsers	Chrome V60 or above, Mozilla V80 or above

# IIT JODHPUR Post Graduate Diploma in Data Engineering & Cloud Computing

## Enquire Now



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Give us Missed Call or Whatsapp Us



professionallearning@wiley.com

www.wileynxt.com



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