

M.Tech. Data Science & Engineering for Working Professionals



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The global Data Science Market is estimated to grow at a **CAGR of 30% to reach USD 140 billion by 2024**, according to a MarketsandMarkets report.

Prepare for a career in Data Science with India's most comprehensive & world class M.Tech. Data Science & Engineering Programme without taking a career break. The programme covers fundamentals to advanced skill & knowledge areas, and is a four-semester programme that helps software & IT professionals build skillset required to **advance their career as a Data Analyst, Data Engineer, Data Architect, and Data Scientist**, etc.



Who Should Apply?

Software and IT professionals working as Software Engineer, Programmer, Software Test Engineer, Support Engineer, Data Analyst, Business Analyst, who wish to transition to roles such as Data Scientist or Data Engineer should consider applying to this programme.



What are the Highlights of the Programme?

- M.Tech. Data Science and Engineering is a BITS Pilani Work Integrated Learning Programme (WILP). BITS Pilani Work Integrated Learning Programmes are UGC approved.
- The programme is of four semesters, with online classes conducted mostly on weekends or after business hours. You can pursue the programme without any career break.
- Offers the most comprehensive Data Science Curriculum for working professionals.
- The programme has an unmatched range & depth, and covers fundamentals to advanced skill & knowledge areas associated with the domain of Data Science.
- Aimed at transitioning software & IT professionals into Data Science careers tracks closest to their interest/passion.
- Curriculum maps knowledge and skill areas required to perform popular Data Science job roles such as Data Analyst, Data Engineer, Data Architect, and Data Scientist, etc.
- The programme offers a set of core courses and elective courses, allowing students to specialize in Data Management for Machine Learning, Ethics for Data Science, Optimization Techniques for Analytics, Natural Language Processing, etc.
- The programme makes use of Tools and Technologies. These include Apache Spark, Apache Storm for Big Data Systems/ Real time Processing; Tableau for data visualisation; Tensorflow for Deep Learning; Various Packages within Python for data processing, machine learning, data visualization etc.
- The Dissertation (Project Work) in the final semester enables students to apply concepts and techniques learned during the programme.
- The programme uses a Continuous Evaluation System that assesses the learners over convenient and regular intervals. Such a system provides timely and frequent feedback and helps busy working professionals stay on course with the programme.
- The education delivery methodology is a blend of classroom and experiential learning. Experiential learning consists of lab exercises, assignments, case studies and work-integrated activities.
- Participants who successfully complete the programme will become members of an elite & global community of BITS Pilani Alumni
- Option to submit fee using easy-EMI with 0% interest and 0 down payment.



What are the programme objectives?

The most lucrative jobs in the areas of Data Science, Data Engineering and Advanced Analytics go to professionals who have mastered a combinations of critical skills such as Mathematical modeling, Machine learning, Artificial Intelligence, Product development and Scripting languages.

The programme aims to help participants build a solid foundation in these areas by developing skills in:

- Mathematical and Statistical modelling using concepts such as linear algebra and probability to model and solve physical problems.
- Data structures and algorithms and managing time and space-related complexities.
- Computer organisation, architecture and Operating systems and advanced techniques for data processing.
- Data Mining aspects including preprocessing, cleaning & classification, and Data engineering & processing through distributed computing and cloud computing.
- Advanced computing and analytical skills in areas such as Machine Learning, Artificial Intelligence, Deep Learning and Natural Learning Processing.





Learning methodology



Attend online lectures over weekends

Lectures are conducted live via online classes. These lectures can be attended via the internet using a computer from any location. These online classrooms offer similar levels of interactivity as regular classrooms at the BITS Pilani campus.

Classes for students admitted during the period July 2023 - Oct 2023 will begin in Oct / Nov 2023. The class schedule is announced within 1 week of completion of the admission process.

The online lectures are conducted usually over weekends for a total of 7-8 hours per week. If you miss a lecture, you can also access the recorded lecture on the internet.

Lectures are conducted on Sat/Sun as per Indian Standard Time.



Experiential learning

The programme emphasises on Experiential Learning that allows learners to apply concepts learnt in classroom in simulated and real work situations. This is achieved through:

Tools & Technologies covered

Tools & Technologies covered



Case studies and assignments

Carefully chosen real-world cases & assignments are both discussed and used as problem-solving exercises during the programme.



Dissertation

The fourth semester offers an opportunity for learners to apply their knowledge gained during the programme to a real-world like complex project. The learner is expected to demonstrate understanding of vital principles learnt across semesters and their ability to successfully apply these concepts.



Learning methodology

Continuous assessment

The learners' performance is assessed continuously throughout the semester using various tools such as quiz, assignments, mid-semester and comprehensive exams. The assessment results are shared with the learners to improve their performance. Each course will entail a minimum of 1 Assignment/ Quiz, a Mid-semester exam and a final Compre-hensive exam. Your semester calendar will indicate the dates of the Mid-semester and Comprehen- sive exam. Online Exams facility available.

Typically, a Mid-semester or Comprehensive examination for a course is for 2-3 hours duration. The examinations are typically conducted over a weekend, i.e. Saturday and Sunday.

Supplementary learning

In addition to live weekly online lectures, supplementary live online sessions will be organised periodically comprising of tutorials, doubt-clearing interactions, and industry talks (18-20 hours per semester).





Programme Curriculum

The programme features 12 courses between Semester 1-3, and a Dissertation in Semester 4. All the courses will be offered using live online mode.

First Semester

- Mathematical foundations for Data Science
- Introduction to Data Science
- Computer Organization and System Software Data
- Structures and Algorithm Design

Second Semester

- Introduction to Statistical Methods
- Elective - I
- Elective - II
- Elective - III

Third Semester

- Big Data Systems
- Elective - IV
- Elective - V
- Elective - VI

Fourth Semester

- Dissertation

General Pool of Electives

- Data Warehousing
- Graphs – Algorithms and Mining Deep Learning*
- Probabilistic Graphical Models Ethics for Data Science
- Optimization Techniques for Analytics Data
- Management for Machine Learning Natural Language Processing

- Design of Experiments for Data Science Information Retrieval
- Data Visualization and Interpretation
- Stream Processing and Analytics
- Artificial and Computational Intelligence
- Machine Learning*
- Applied Machine Learning

*Machine Learning course is a prerequisite for Deep Learning elective course.

Note: Choice of Electives is made available to enrolled students at the beginning of each semester. Students' choice will be taken as one of the factors while deciding on the Electives offered. However, Electives finally offered will be at the discretion of the Institute.



What is the Eligibility Criteria?

Employed professionals holding B.E. / B.Tech. with at least 60% aggregate marks and minimum one-year relevant work experience after the completion of the degree are eligible to apply.

Employed professionals holding MCA / M.Sc. or equivalent with at least 60% aggregate marks with university level mathematics / statistics as mandatory subjects and minimum one-year relevant work experience after the completion of the degree are also eligible to apply.

Fee Structure

The following fees schedule is applicable for candidates seeking new admission during the academic year 2023-2024.

Application Fees
(one time)

₹1,500

Admission Fees
(one time)

₹16,500

Semester Fees
(per semester)

₹68,500

0% Easy-EMI Option

Instant EMI option with 0% interest and 0 down payment is now available that allows you to pay programme fee in an easy and convenient way.

- Instant online approval in seconds
- No Credit Cards/ CIBIL score required
- Easy & Secure online process using Aadhaar and PAN number Anyone with a Salary Account with Netbanking can apply
- Option to submit fee using easy-EMI with 0% interest and 0 down payment.

[Click here](#) to learn more

All the above fees are non-refundable.

Important: For every course in the program institute will recommend textbooks, students would need to procure these textbooks on their own.



Mode of Examinations

Examinations Mode Options applicable for students admitted in Batch starting in Oct / Nov 2023:

Semester 1, 2 and 3 have Mid-Semester Examinations and Comprehensive Examinations for each of course. These examinations are mostly scheduled on Friday, Saturday or Sunday. During these semesters, in addition to the Mid-Semester and Comprehensive examinations, there will also be Quizzes/Assignments conducted online on the Learning Management System (LMS) as per the course plan in which the students need to participate. In Semester 4 (Final Semester), the student will be doing a Dissertation/Project Work as per the Institution's guidelines.

Two Options on Mode of Examinations:

It is institute's endeavour to offer two options on mode of exams at the time of the registration for each semester of the programme. However, please note that Option 2 as explained below is offered purely on the discretion of the institute. Availability of Option 2 is not assured and is subject to institute's own assessment of the feasibility of providing it. Students will need to choose one from the available option/s provided by the institute at the time of registering for every semester. The two mode of exam options are explained below:



Option 1 - Examinations at Designated Examination Centres:

- ★ Students choosing this option will need to appear in person for taking the examinations at the institution's designated examination centres as per the examination schedule, instructions, rules and guidelines announced before every examination. These designated examination centres are at the following locations: **Bangalore, Chennai, Delhi NCR, Hyderabad, Pune, Mumbai, Kolkata, Goa, and Pilani**. In addition to these locations, Institution also has a designated examination centre

Option 2 - Online Examinations:

- ★ Students choosing this option can take the examinations online from any location e.g. office or home. **However the Institute at its discretion may choose not to offer this option and in such a case students will need to take the examinations as per Option 1 that entails appearing for the examination at any one of the designated examination centres.** Also, to take an Online Examination, the student must possess a Laptop or Desktop system with Two Web Cams (One Web Cam for the student's frontal face view and a Second Web Cam for the student's and Laptop or Desktop system's full side view during the exam), a smart phone and good internet connectivity. Please **click here** to refer to the complete details about mandatory IT and Non-IT Infrastructure requirements for taking the online examinations. A student should choose this option only if the student is confident to arrange the required mandatory IT Infrastructure and Non-IT Infrastructure to take the examinations under this mode. Students opting for online examinations would require to log in to the institution's online examination platform as per the announce examination schedule and take the online examinations in compliance with the institution's defined instructions, guidelines, and rules which are announced before all examinations.

Important:

While it will be institute's endeavour to offer both the above options for students to choose from at the time of registering for any semester, however availability of the online mode option may not always be feasible or is assured and Institute at its own discretion could choose to offer only Option 1 as mentioned above. Also note that The Institute regularly takes actions to optimize its examination system and hence the mandatory IT and Non-IT Infrastructure requirements, instructions, guidelines, and rules associated with both the above mentioned examination modes may change anytime at the Institute's discretion. All students will need to 100% comply with any such changed specifications announced by the Institute.





Course Wise Syllabus

Mathematical Foundations for Data Science

Vector and matrix algebra, systems of linear algebraic equations and their solutions; Eigenvalues, eigenvectors and diagonalization of matrices; multivariate calculus, vector calculus, Jacobian and Hessian, multivariate Taylor series, gradient descent, unconstrained optimization, constrained optimization, nonlinear optimization, stochastic gradient descent, dimensionality reduction and PCA, optimization for support vector machines.

Introduction to Statistical Methods

Basic probability concepts, Conditional probability, Bayes Theorem, Probability distributions, Continuous and discrete distributions, Transformation of random variables, estimating mean, variance, covariance, Hypothesis Testing, Maximum likelihood, ANOVA single factor, dual factor, time series analysis: AR, MA, ARIMA, SARIMA, sampling based on distribution, statistical significance, Gaussian Mixture Model, Expectation Maximization.

Data Warehousing

Introduction, evolution of data warehousing; decision support systems; goals, benefit, and challenges of data warehousing; architecture; data warehouse information flows; software and hardware requirements; approaches to data warehouse design; creating and maintaining a data warehouse; Online Analytical Processing (OLAP) and multi-dimensional data, multi-dimensional modeling; view materialization; data marts; data warehouse metadata; data mining.

Computer Organization & Software Systems

Programmer model of CPU; Basic concept of buses and interrupts; Memory subsystem organization; I/O organization; Concept of assembler, linker & loader; Types of operating systems; Concept of process; OS functions: Process scheduling, Memory management, I/O management and related issues.

Graphs - Algorithms and Mining

Basic concepts of graphs and digraphs connectivity, reachability and vulnerability; Trees, tournaments and matroids; Planarity; Routing and matching problems; Representations; Various algorithms; applications, introduction to graph mining, Graph Pattern Mining, Graph Classification, Graph Compression, graph model, graph dynamics, social network analysis, visualization, summarization, graph clustering, link analysis, applications of graph patterns.

Big Data Systems

What is big data - are existing systems sufficient?; Data Warehouse v/s Data Lakes; Hadoop – Components; Storage - Relational DBs/ NoSQL dbs / HDFS / HBase / Object Data stores - S3; Serialization; Interfaces - Hive/ Pig; Stream Processing; Spark; Mahout.

Deep Learning

Common Architectural Principles of Deep Networks; Building Blocks of Deep Networks; Convolutional Neural Networks (CNNs); Recurrent Neural Networks; Recursive Neural Networks; Building Deep Networks with ND4J; Applications to Sequence Data, Anomaly Detection; Tuning Deep Networks; Vectorization.

Probabilistic Graphical Models

HMM, Markov Random Field, Bayesian networks, Representation, Learning, Inference; Dynamic Bayesian Networks and Temporal Bayesian networks, applications.

Ethics for Data Science

Nature of data - data as a by-product of computing, operations data (e.g., sales/marketing), surveillance data (business or government), data collected for research; Ethics - What are ethics, need for ethics, Ethical concerns in computing and analytics; Why data science needs ethics?; Issues

-political/social, liberty and justice, fairness and equality, business competitiveness, privacy, anonymity, and security; Data Ownership, Informed Consent, Security Risks (Privacy, Anonymity, Integrity, and Provenance); Ethical methods for sourcing/collecting data, and for storage/ distribution of data. Data validation. Algorithmic Fairness and Case Studies; Solutions to address ethical issues for government, corporations/organizations, research, public use of data, social norms, legal compliance, and case studies. Data ethics in specific domains - e.g. health care, finance, and social studies/research.

Optimization Techniques for Analytics

Role of optimization in different types of analytics, Introduction to Linear Programming, LP Model and graphical solution, Primal Simplex method, Dual Simplex and Post Optimality Analysis, Revised Simplex method with examples, Application of linear programming in transportation, assignment problems, Integer linear programming, mixed integer programming, complexity analysis, branch and bound techniques, goal programming, Network models - critical path method and PERT, Dynamic programming, game theory, additional meta heuristic techniques, 2-3 case studies from relevant industry domains.

Data Management for Machine Learning

Data Models and Query Languages: Relational, Object-Relational, NoSQL data models; Declarative (SQL) and Imperative (Map Reduce) Querying; Data Encoding: Evolution, Formats, Models of dataflow; Machine learning workflow; Data management challenges in ML workflow; Data Pipelines and patterns; Data Pipeline Stages: Data extraction, ingestion, cleaning, wrangling, versioning, transformation, exploration, feature management; Modern Data Infrastructure: Diverse data sources, Cloud data warehouses and lakes, Data Ingestion tools, Data transformation and modelling tools, Workflow orchestration platforms; ML model metadata and Registry, ML Observability, Data privacy and anonymity.

Natural Language Processing

Natural Language Understanding and Generation, N-gram and Neural Language Models, Word to Vectors / Word Embedding (Skip gram/CBOW, Glove, BERT/ XLM, MURIL), Part of Speech Tagging, Hidden Markov Models, Parsing - Syntactic, Statistical, Dependency, Word Sense Disambiguation, Semantic Web Ontology.

Design of Experiments for Data Science

Introduction and importance of Experimental Design, Testing of Hypothesis, Designs with One Source of Variation, Multiple Comparison Testing, Interaction Effect, Factorial Experiment, Fractional Factorial Designs & Confounding, Latin Squares and Graeco-Latin Squares, Fractional-Factorial Designs, Taguchi Design, Designs with Random Effects, Optimal Designs and Model Uncertainty, Design for Nonlinear Model, Sequential Designs.

Introduction to Data Science

Data Analytics, Data and Data Models, Data wrangling, Feature Engineering, Classification and Prediction, Association Analysis, Clustering, Anomaly Detection, exploratory / explanatory data analysis with visual storytelling, Ethics for Data Science.

Information Retrieval

Organization, representation, and access to information; categorization, indexing, and content analysis; data structures for unstructured data; design and maintenance of such data structures, indexing and indexes, retrieval and classification schemes; use of codes, formats, and standards; analysis, construction and evaluation of search and navigation techniques; search engines and how they relate to the above. Multimedia data and their representation and search.

Distributed Data Systems

Distributed File Systems - File System Models; Replication and Synchronization - Caching; Failure & Recovery; File System Security. Distributed Databases - Distributed Data Sources and Updates; Database Connectivity; Concurrency Control and Distribution mechanism; Distributed indexing schemes. Database security. Data on the Web - Web as a distributed data repository. Data Collection and Use Crawlers, Search Engines, and Indexing Schemes. Information Retrieval Techniques. Data Exchange - Hierarchical Data Models, XML, and query languages. Semi-structured / Unstructured data -querying and synchronization. Pervasive Data - Data distribution and access for non-computing devices, small computing devices, embedded computing devices and sensory devices.

Data visualization and Interpretation

Visualization as a Discovery tool, Visualization skills for the masses, The Visualization methodology, Visualization design objectives, Exploratory vs. explanatory analysis, Understanding the context for data presentations, 3 minute story, Effective Visuals, Gestalt principles of visual perception, Visual Ordering, Decluttering, Story Telling, Visualization Design; Taxonomy of Data Visualization Methods: Exploring Tableau, Dashboard and Stories, Bullet graphs, Pareto charts, Custom background images; Dashboard : Dashboard categorization and typical data, Characteristics of a Well-Designed Dashboard, Key Goals in the Visual Design Process; Power of Visual Perception: Visually Encoding Data for Rapid Perception, Applying the Principles of Visual Perception to Dashboard Design.

Stream Processing and Analytics

Real Time , Streaming Data & Sources, Real time streaming system architecture , Characteristics of a Real Time Architecture and Processing ; Configuration and Coordination Systems: Distributed State and Issues, Coordination and Configuration using Apache ZooKeeper; Data Flow Management : Distributed Data Flows , Various Data Delivery and Processing Requirements, N+1 Problem, Apache Kafka (High-Throughput Distributed Messaging); Processing Stream Data with Storm; Overview of Data Storage – Requirements: Need for long-term storage for a real time processing framework, In-memory Storage, No-Sql Storage Systems, Choosing a right storage solution; Visualizing Data :Requirements, Principles and tools; Bounds of Random variables, Poisson Processors, Maintaining Simple Statistics from Data Streams, Sliding Windows and computing statistics over sliding windows, Data Synopsis (Sampling, Histograms, Wavelets, DFT), Exact Aggregation, Timed Counting and Summation, Multi Resolution Time Series Aggregation, Stochastic Optimization; Statistical Approximation to Streaming Data: Probabilities and Distributions, Sampling Procedures for Streaming Data, Approximating Streaming Data with Sketching, Registers and Hash Functions, Working with Sets, The Bloom Filter, Distinct Value Sketches, The Count-Min Sketch; Clustering techniques for Streaming Data; Classification methods : Decision Tree (VFDT); Evaluating stream processing algorithms; Case Studies in Designing solutions to streaming data

Artificial and Computational Intelligence

Agents and environments, Task Environments, Working of agents; Uninformed Search Algorithms: Informed Search. Local Search Algorithms & Optimization Problems: Genetic Algorithm; Searching with Non-Deterministic Actions, Partial Information and Online search agents, Game Playing, Constraint Satisfaction Problem, Knowledge Representation using Logics: TT-Entail for inference from truth table, Proof by resolution, Forward Chaining and Backward Chaining, Inference in FOL, Unification & Lifting, Forward chaining, Backward Chaining, Resolution; Probabilistic Representation and Reasoning : Inference using full joint distribution, Representation of Conditional Independence using BN, Reinforcement Learning; Difference between crisp and fuzzy logic, shapes of membership function, Fuzzification and defuzzification, fuzzy logic reasoning; Decision making with fuzzy information, Fuzzy Classification; Connectionist Models: Introduction to Neural Networks, Hopfield Networks, Perceptron Learning, Backpropagation & Competitive Learning, Applications of Neural Net: Speech, Vision, Traveling Salesman; Genetic Algorithms - Chromosomes, fitness functions, and selection mechanisms, Genetic algorithms: crossover and mutation, Genetic programming.

Machine Learning

Introduction to Machine Learning, Various kinds of learning, Supervised Learning, Unsupervised Learning, Model Selection; Bayesian Learning, MAP Hypothesis, MDL Principle, Bias Variance Decomposition, Bayes Optimal Classifier, Naive Bayes Classifier; Linear Models for Regression, Linear Models for Classification; Non-Linear models, Decision trees; Instance Based Learning, KNN Algorithm, CBR Learning; Support Vector Machines, VC Dimension; Neural Networks, Perceptron Learning, Back Propagation Algorithm; Introduction to Genetic Algorithms.

Applied Machine Learning

Need for machine learning. Prediction and classification methods. Use cases in application domains. Interpretation of results. Limitations of various techniques. End to end Machine learning - data collection, data preparation, model selection.

Dissertation

A student registered in this course must take a topic in an area of professional interest drawn from the on the job work requirement which is simultaneously of direct relevance to the degree pursued by the student as well as to the employing / collaborating organization of the student and submit a comprehensive report at the end of the semester working under the overall supervision and guidance of a professional expert who will be deemed as the supervisor for evaluation of all components of the dissertation. Normally the Mentor of the student would be the Dissertation supervisor and in case Mentor is not approved as the supervisor, Mentor may play the role of additional supervisor. The final grades for dissertation are Non-letter grades namely Excellent, Good, Fair and Poor, which do not go into CGPA computation.



How to apply

- **Click here** to visit the BITS Pilani Online Application Center. Create your login at the Application Center by entering your unique Email id and create a password of your choice.
- Once your login has been created, you can anytime access the online Application Center using your email ID and password. Once you have logged in, you will see a screen showing 4 essential steps to be completed to apply for the programme of your choice.
- Begin by clicking on Step 1 - 'Fill/ Edit and Submit Application Form'. This will enable you to select the programme of your choice. After you have chosen your programme, you will be asked to fill your details in an online form. You must fill all details and press 'Submit' button given at the bottom of the form.
- Take the next step by clicking on Step 2 - 'Download Application PDF Copy'. This will download a pdf copy of the application form on your computer.
- Now, click on Step 3 - 'Pay Application Fee' to pay INR 1,500/- using Net banking/ Debit Card/ Credit Card.
- Take a printout of the downloaded Application Form and note down the Application Form Number that appear on the top-right corner of the first page. This Application Form Number should be referred in all future correspondence with BITS Pilani.
- In the printout of the downloaded Application Form, you will notice on page no. 3 a section called the Employer Consent Form. Complete the Employer Consent Form. This form needs to be signed and stamped by your organisation's HR or any other authorised signatory of the company.

Important: In view of work-from-home policies mandated by many organisations, a few candidates may not be able to get the physical forms signed by their HR/ other authorised organisational representative. Such candidates may instead request an email approval to be sent to their official email ID by the HR using the format available through this [link](#).

- Further on page no. 4 of the printed Application Form is a section called the Mentor Consent Form. The Mentor Consent Form needs to be signed by the Mentor.

Important: In view of work-from-home policies mandated by many organisations, a few candidates may not be able to get the physical forms signed by their Mentor. Such candidates may instead request an email approval to be sent to their official email ID by the Mentor using the format available through this [link](#).

Candidates should ideally choose the immediate supervisor or another senior person from the same organisation. In case a suitable mentor is not available in the same organisation, a candidate could approach a senior person in another organisation who has the required qualifications. Wherever the proposed Mentor is not from the same employing organization as that of the candidate, a supporting document giving justification for the same should be provided by the candidate's employer.

Candidates applying to B.Tech. programmes should choose a Mentor who is an employed professional with B.E./ B.S./ B.Tech./ M.Sc./ A.M.I.E./ Integrated First Degree of BITS or equivalent. Candidates applying to M.Tech., M.Sc., MBA, M.Phil programme should choose a Mentor who is an employed professional with:

- B.E./ M.Sc./ M.B.A./ M.C.A./ M.B.B.S. etc. and with a minimum of five years of relevant work experience OR
 - M.E./ M.S./ M.Tech./ M.Phil./ M.D./ Higher Degree of BITS or equivalent
- Further on page no. 5 of the downloaded Application Form, is a Checklist of Enclosures/ Attachments.
 - Make photocopies of the documents mentioned in this Checklist
 - Applicants are required to self-attest all academic mark sheets and certificates
 - Finally, click on Step 4 - 'Upload & Submit All Required Documents'. This will allow you to upload one-by-one the printed Application Form, Mentor Consent Form, Employer Consent Form, and all mandatory supporting documents and complete the application process. Acceptable file formats for uploading these documents are .DOC, .DOCX, .PDF, .ZIP and .JPEG.
 - Upon receipt of your Application Form and all other enclosures, the Admissions Cell will scrutinise them for completeness, accuracy and eligibility.
 - Admission Cell will intimate selected candidates by email within two weeks of submission of application with all supporting documents. The selection status can also be checked by logging in to the Online Application Centre.



UGC Approval

BITS Pilani is an Institution of Eminence under UGC (Institution of Eminence Deemed to be Universities) Regulations, 2017. The Work Integrated Learning Programmes (WILP) of BITS Pilani constitutes a unique set of educational offerings for working professionals. WILP are an extension of programmes offered at the BITS Pilani Campuses and are comparable to our regular programmes both in terms of unit/credit requirements as well as academic rigour. In addition, it capitalises and further builds on practical experience of students through high degree of integration, which results not only in upgradation of knowledge, but also in upskilling, and productivity increase. The programme may lead to award of degree, diploma, and certificate in science, technology/engineering, management, and humanities and social sciences.

On the recommendation of the Empowered Expert Committee, UGC in its 548th Meeting held on 09.09.2020 has approved the continued offering of BITS Pilani's Work Integrated Learning programmes.





Students Speak



I was looking for an upskilling programme in the field of Data Science that meets my career aspirations without any career break and M.Tech Data Science & Engineering from BITS Pilani WILP was exactly what I needed. My experience with the faculty was great and the concepts I learnt here are relevant in real-time situations as well.

C R Bhargavi

Software Engineer, Ford Motor Pvt Ltd
Participant of M.Tech. Data Science & Engineering



I was looking for a program where I could learn multiple things relevant to my work profile. I then heard of BITS Pilani WILP. My overall journey with WILP has been amazing. I've learned a lot and now I am more confident at my workplace. I am able to explain complex things to people easily, which is ultimately helping my entire team to perform better.

Prashant Thakre

Technical Architect, GE Healthcare
Participant of M.Tech. Data Science and Engineering



I truly see my decision of pursuing a degree programme in M.Tech Data Science & Engineering from BITS Pilani WILP as the best career move so far. This programme equipped me with world-class skills, technologies and in-depth knowledge in this field that helped me to become the leader. Learning without a career break from the best faculty to weekend classes, recorded lectures, everything was just perfect!

Abhishek Kumar Mishra

Leader, Data Science, Brilio Technologie
Participant of M.Tech. Data Science & Engineering





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to ignite the change you desire



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