

**PROGRAM CODE: DS7B**

**PROGRAM TITLE: Master of Technology (M.Tech.)**

- **Big Data Analytics**

- **BATCH: 2021-23**

## **PROGRAMME PROFILE**

### **Introduction:**

There are many applications, such as insurance and banking, social media, healthcare, e-commerce, telecommunications, climate change, weather forecast, etc., that are generating massive amounts of data, so called “Big Data”, with volume, velocity, variety, veracity and value at an unprecedented scale. This has led to a critical demand of skilled professionals, who can mine, analyse and interpret the data. Making sense of this massive data is a very difficult challenge for scientific, technological and industrial disciplines. Data science or analytics provides techniques to handle the flood of big data generated across the world. It is concerned with the acquisition, storage, retrieval, processing and finally the conversion of data into knowledge where the quantum of data is very large.

Big data analytics draws from a diverse mix of statistics and operations research, machine learning, deep learning, algorithm design, and systems engineering. The Master of Technology (M.Tech.) programme in Big Data Analytics is designed to provide an in-depth knowledge of big data techniques, and their applications in improving business processes and decision making. This is a two year postgraduate interdisciplinary programme spread over four semesters and duly approved by AICTE, New Delhi.

The curriculum for this programme has been designed with inputs from industry and academia. The capstone of the programme is a dissertation during second year in which students apply the acquired theoretical knowledge in the programme to solve real-world business problems.

### **Objectives:**

This programme is designed to equip its students with an in-depth knowledge of Big Data Analytics. At the end of the programme, the students will be able to:

- Appreciate the emergence of big data analytics as a competitive strategy.
- Analyse datasets by applying techniques from statistics, operations research, machine learning, deep learning, network analysis and data mining.
- Process unstructured data such as social media messages and machine generated click stream logs.

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- Have a working knowledge of languages, platforms and tools that support statistical analysis and visualisation (R/Python), distributed computing (Hadoop/Spark) and pattern recognition.
- Apply the theories, techniques and tools to solve problems from a wide variety of industries such as manufacturing, services, retail, software, banking and finance, sports, pharmaceuticals, and aerospace.

### **Eligibility:**

At least 55% aggregate marks in B.E./B.Tech. in any relevant branch of Engineering or Masters degree in Physics / Mathematics/ Statistics / Computer Science or any other equivalent degree. Relaxation of 5% marks in eligibility for sponsored/ SC/ ST candidates. Maximum age limit is 28 years as on 1<sup>st</sup> July of the admission year. No age limit for female / sponsored candidates. Relaxation in age for SC/ST/OBC/PH candidates is 3 years.

For sponsored candidates minimum two years working experience after qualifying degree is required. The sponsored candidates have to submit a certificate from the employer on the prescribed Performa.

### **Admission Procedure:**

GATE qualified candidates will be preferred for admission. Admissions will be given as per GATE score. However, if seats are vacant due to non-availability of the GATE qualified candidates, then NON-GATE candidates will be admitted as per the merit developed on the basis of % of marks obtained in the qualifying examination.

The sponsored candidates will be admitted as per the merit developed on the basis of % of marks obtained in the following categories:

Category	Qualifying examination	Written Test	Interview	Service Experience*	Total
Max. Marks	100	50	30	20	200

\* Service experience - 2 marks per year limited to max. 20 marks.

### **Seats:**

Unreserved-10; SC-1; ST-2; Sponsored-5 (Total seats: 18).

### **Duration:**

Four Semesters (Two Years).

### **Scholarships:**

Scholarship is provided directly to the GATE qualified candidates by AICTE through DBT (Direct Benefit Transfer). Candidates must note that the University/School does not take any responsibility in this regard.

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## Fee Structure:

Semester	Academic Fee	Development & Maintenance Fee	Students' Services Fee		Examination Fee	Total (Rs.)	
			Boys	Girls		Boys	Girls
First	10000	7500	3300	3111	2500	23300	23111
Second	10000	7500	2911	2722	2500	22911	22722
Third	10000	7500	3300	3111	2500	23300	23111
Fourth	11500	3000	2911	2722	2500	19611	19422

- An additional academic fee of Rs. 5000/- per semester will be charged from sponsored candidates.
- If a student repeats a paper(s) in a semester, an additional fee of Rs.500/- per paper shall be payable.
- Hostel Fee and Central Library Fee will be extra.
- For NRI/ NRI Sponsored/ PIO/ Foreign Nationals Belong to SAARC or BIMSTEC: Fee in each semester will be 2.5 times of the above mentioned existing total fee.
- Foreign Nationals Belong to other than SAARC or BIMSTEC: Fee of US\$ 3500 per annum shall be payable on yearly basis.
- Caution Money (Refundable) and Alumni Fee (Chargeable in the First Semester):

Category	Caution Money	Alumni Fee
For Indian Nationals	Rs. 4,000	Rs. 500
For NRI/ NRI Sponsored/ PIO/ Foreign Nationals Belong to SAARC or BIMSTEC	Rs. 10,000	Rs. 1,000
Foreign Nationals Belong to other than SAARC or BIMSTEC	USD 500	USD 100

## Learning Outcomes and Job Opportunities:

### **Fundamental knowledge in**

computing tools and techniques in the field of Big Data for solving real world problems.

### **Advanced knowledge in**

Data Science and Analytics.

### **Ability for employment as**

Data Scientist / Analyst, Consultant, Govt. Jobs, - Analyst, Professionals in Higher Education.

### **Ability for higher education and research in the areas of**

Predictive Modelling, Data Science, Data Analytics.