PROGRAM CODE: DS7A

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

BRANCH: Data Science

- **BATCH: 2024-26**

PROGRAMME PROFILE

Introduction:

There are many applications, such as climate change, social media, healthcare, e-commerce, weather forecast, etc., that are generating massive amounts of datawith volume, velocity, variety, veracity and value at an unprecedented scale. This has led to a critical demand of skilled professionals, Data Scientists, who can mine and interpret the data. Making sense of this massive data is a very difficult challenge for scientific, technological and industrial disciplines.Data science is concerned with the acquisition, storage, retrieval, processing and finally the conversion of data into knowledge where the quantum of data is very large. Three disciplines that have strong relationships with data science are computer science, mathematics and statistics.

The Master of Technology (M.Tech.) programme in Data Science is designedto meet such demands and train the next generation of data scientists.This is a two year postgraduate interdisciplinary course spread over four semesters. M.Tech. in Data Science is approved by the AICTE, New Delhi.

The curriculum covers subjects such as linear algebra, calculus, forecasting methods, operations research, statistical research methods, Hadoop/Spark, R, Python, Big data, cloud computing, system dynamics, etc. Students have the opportunity to gain hands-on experience with a variety of analytical tools available for the purpose of structuring large data sets to unearth hidden information to allow the organizations to build and sustain a long-term competitive advantage. The capstone of the programme is a dissertation during second yearin which students apply the acquired theoretical knowledge in data science to solve real-world business problems.

Objectives:

The broad objectives of the programme are as follows:

- To train and develop in depth understanding of the key technologies in data science such as database management, data mining, data visualization techniques, Hadoop, R, forecasting methods, and statistics.
- To provide opportunities of higher studies in the area of data science.
- To impart knowledge on various theoretical and practical aspects of data science.
- To practice problem analysis and decision-making.
- To gain practical, hands-on experience with statistical programming languages and big data tools.

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.

Age Limit: As per the directives of Government of Madhya Pradesh, there is no upper age limit for admission in various programmes.

Admission Procedure:

Indian Students:

GATE qualified candidates will be preferred for admission and admission will be given on the basis of merit of GATE score.The admission of Non-GATE students will be offered as per merit developed on the basis of score of CUET-PG conducted by NTA.

NRI/ Foreign Students:

Direct admission of NRI/ Foreign Students without entrance test (GATE/ CUET-PG), but Foreign students should have working knowledge of English.

Syllabus for Entrance Test

The candidate has to appear in the subjects as decided by the University for admission in this programme. The syllabus of such subjects will be as per NTA.

Seats: 24 and Additional 2 seats for EWS

Total Seats	URO	URF	STO	STF	SCO	SCF	OBO	OBF	NRI
24	7	4	3	2	3	1	2	1	1

Additional Seats:

Total Seats	EWS	EW-T	EW-NT
4	2	1	1

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.

Fee Structure: 2023-25

Semester	Academic Fee	Development & Maintenance	Students' Services Fee	Examination Fee	Total (Rs.)

		Fee	Boys	Girls		Boys	Girls
Odd	7000	5500	3630	3422	2750	18880	18672
Even	7000	5500	3202	2994	2750	18452	18244

Fees structure for the batch 2024-26 is under revision.

+ Sponsored Candidates will be charged Rs. 5000/- per semester additional as Development and Maintenance Fee.

- 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:

Students after completing the M.Tech. programme in Data Science will be able to:

- Work with messy data, applying models, and understanding the business context.
- Work with unstructured data from various sources like video and social media.
- Use Data Visualization techniques.
- Write the programming codes in R and Python.
- Employ cutting edge tools and technologies to analyze Big Data.
- Demonstrate knowledge of mathematical and statistical skills.
- Demonstrate use of team work, leadership skills, and decision making.