

Master of Science in Data Science (MSDS)

Introduction to MSDS Program:

The Master of Science (MS) in Data Science is a graduate-level program that focuses on developing professionals with the skills and knowledge required to analyze and interpret complex data sets. The program combines elements of computer science, statistics, and domain-specific knowledge to equip students with the skills to derive insights from data.

The MS in Data Science program covers topics such as data management, data mining, machine learning, statistical modeling, and data visualization. Students will learn how to use programming languages such as Python and R, as well as tools such as Hadoop, Spark, and SQL to manipulate, analyze and visualize data. In addition, they will learn how to communicate insights and findings to stakeholders in a clear and concise manner.

The program is designed for individuals who have a background in computer science, statistics, mathematics, or a related field, and who are looking to expand their skill set in data science. Graduates of the program are well-equipped to pursue careers as data scientists, data analysts, business analysts, data engineers, and other related roles in industries such as healthcare, finance, technology, and government.

Overall, the MS in Data Science program provides students with a solid foundation in the tools and techniques used in the field of data science and prepares them for a successful career in this growing and exciting field.

MSDS Program Objectives:

- To develop proficiency in programming languages and tools commonly used in data science, such as Python, R, SQL, Hadoop, and Spark.
- To build a strong foundation in statistical modeling and analysis to effectively derive insights from data.
- To gain knowledge and skills in machine learning and data mining algorithms, and their application to various domains.
- To learn about data visualization techniques and effective communication of insights to stakeholders.
- To understand the ethical and legal implications of working with data and how to maintain data privacy and security.
- To provide students with the opportunity to work on real-world data science projects and gain hands-on experience.
- To develop critical thinking and problem-solving skills to tackle complex data science challenges.
- To prepare students for leadership roles in the field of data science, and for pursuing further research in the field.
- Overall, the main objective of an MS in Data Science program is to equip students with the knowledge and skills needed to analyze and interpret complex data sets, and to prepare them for a successful career in the field of data science.

Eligibility Criteria for MSDS:

Degree in a relevant subject, earned from a recognized university after 16 years of education with at least 60 % marks or a CGPA of at least 2.0 on a scale of 4.0

The University may recommend deficiency courses after considering the educational background and knowledge of the candidate. The deficiency courses may be 6-9 credit hours recommended by the admission committee.

A student cannot register in MS courses unless all specified deficiency courses have been passed.

Admission Test:

- a) Students must pass a rigorous admission test as an eligibility condition for admission to MS programs, with a passing score of 50 %.
- b) Accept the GRE/HAT General/Equivalent tests, with a passing score of 50 %.

Duration:

The minimum duration for completing MSDS is 1.5 years. However, the HEC allows a maximum of 4 years to complete the MSDS degree.

Credit Hours:

Minimum credit hours are 32.

Registration in “MS Thesis - I” is allowed provided the student has

- Earned at least 18 credits.
- Passed the “Research Methodology” course; AND
- CGPA is equal to or more than 2.5.

Award of Degree:

For the award of an MSDS degree, a student must have:

1. With Thesis:
 - Passed courses of 26 credit hours, including core courses, Fahm-e-Quran courses, and research methodology course + 6 credit hours of MS Thesis.
 - Obtained a CGPA of 2.5 or above.
2. Without Thesis:
 - Passed courses totaling at least 32 credit hours, including core courses and Fahm-e-Quran Courses
 - Obtained a CGPA of 2.5 or above.