

MASTER OF SCIENCE IN BIG DATA
36 credits, 60 Weeks or 4 Terms (15 weeks in length each).

Program Description

The master's program in Big Data is designed to equip students with a holistic approach toward data reasoning. It consists of core courses that focus on offering comprehensive framework that allows students to analyze large data sets by developing depth in data collection, storage, retrieval, manipulation, visualization, modeling, and interpretation. This will include extensive coursework intended to develop skills that enable students to identify patterns, correlations, and insights among different data sets.

Program Objective

The objective of the Master of Science program in Big Data is to empower students with the knowledge and skills necessary to collect, store, analyze and use large volumes of data to drive business decisions. By mastering the fundamental concepts of data science, data management and data analysis, students gain the insights needed to uncover hidden patterns and trends within massive data sets. Through both theoretical and practical coursework, students learn how to leverage advanced analytical techniques and machine learning to derive actionable insights into complex data. The program also emphasizes ethical considerations, ensuring that students have a strong understanding of data privacy, ownership and governance.

Program outcomes: Upon completion of the program, students will:

- Develop the ability to implement robust data collection methods, design efficient data storage systems, and employ advanced data analysis techniques to extract valuable insights from large and complex datasets.
- Prepare students with the skills to master advanced analytical techniques, including machine learning algorithms, to identify hidden patterns, trends, and correlations within diverse and extensive datasets, enabling them to derive actionable insights for informed decision-making.
- Develop advanced capabilities in designing, conducting, and analyzing impactful research and equip students with a profound understanding of the latest trends, groundbreaking technologies, and the ethical nuances.
- Develop the capability to strong understand ethical considerations related to data privacy, ownership, and governance, as well as the ability to apply ethical frameworks to navigate the complexities of data ethics and compliance within the field of big data analytics.
- Master project management best practices tailored to big data projects, including scope definition, resource optimization, risk management, and agile methodology.

Master of Science in Big Data PROGRAM OUTLINE		
Course Number	Course Title	Credit Hours
Semester 1		
CAP6632	Introduction to Big Data	3
CAP6650	Big Data Analysis and Visualization	3
CAP6640	Database Systems and SQL	3
Semester 2		
CAP6320	Data Analysis and Modeling	3
CAP6655	Data Mining	3
CAP6350	Statistics for Big Data	3
Semester 3		
CAI6610	Machine Learning and Predictive Analytics	3
CAI6619	Deep Learning	3
CAP6701	Data Security and Privacy	3
Semester 4		
PHI5699	Data Ethics	3
CAP6708	Big Data Project Management	3
CAP6720	Big Data Project Capstone	3
TOTAL:		36