

GRADUATE CERTIFICATE IN BUSINESS INTELLIGENCE

The Graduate Certificate in Business Intelligence equips professionals with the analytical, technical, and strategic skills needed to transform data into actionable business insight. Designed for students seeking to strengthen their data-driven decision-making capabilities, the program emphasizes the effective use of data management, analytics, mining, and visualization techniques to support organizational performance and innovation.

The certificate provides a strong foundation in business intelligence concepts, processes, and technologies, with a focus on how organizations store, integrate, analyze, and visualize data to solve problems and uncover new opportunities. Students engage in applied analytics, using statistical, mathematical, and artificial intelligence techniques to perform predictive modeling, classification, segmentation, and forecasting with real-world business data.

To ensure insights are clearly communicated to decision-makers, students study the principles and practices of effective data visualization, learning how to design compelling visual representations that reveal patterns, trends, and relationships in complex data. The program also emphasizes modern data infrastructure through hands-on experience with business database systems. Students analyze structured, semi-structured, and unstructured data, design key performance indicators, and apply semantic search and generative AI techniques to real business problems.

Upon completion of the certificate, students will be prepared to design and implement business intelligence solutions that convert raw data into meaningful insights, supporting strategic, data-driven decision-making across a wide range of organizational contexts.

Students interested in graduate work should refer to the Graduate and Professional Bulletin (<https://catalog.colostate.edu/general-catalog/graduate-bulletin/>).

Learning Objectives

Students will:

1. Gain sound knowledge of the Business Intelligence (BI) field, including impacts, capabilities, and role in decision making.
2. Learn BI technologies and vendors, while gaining hands-on experience with BI tools.
3. Discover the importance of data mining and its application in business.
4. Learn the data mining process, including techniques for classification, segmentation, association, prediction and forecasting.
5. Understand and apply data modeling concepts.
6. Recognize patterns of data relationships that exist in most business applications.
7. Master various aspects of data, such as acquisition, classification, storage, and retrieval.

Requirements

The Certificate combines business intelligence with applied data mining and analytics to optimize, forecast, detect, predict, classify and discover new ways of using data to make a business more productive and

efficient. Completion of the certificate allows students to bring value to companies that have vast quantities of both structured and unstructured data that requires identification, analysis, and transformation into useful data for business optimization and forecasting.

Effective Fall 2019

Additional coursework may be required due to prerequisites.

Code	Title	Credits
Select three courses from the following:		9
CIS 570	Business Intelligence	
CIS 575	Applied Data Mining and Analytics in Business	
CIS 576	Business Data Visualization	
CIS 655	Business Database Systems	
Program Total Credits:		9

*This certificate may have courses in common with other graduate certificates. A student may earn more than one certificate, but a given course may be counted only in one certificate.