

# DATA ANALYTICS (DAT)

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## **DAT 505 Ethical Considerations for Data Analysis 3 credits**

Explore real-world information science dilemmas and frameworks to identify ethical problems and reach ethical decisions within the context of analyzing data. This course focuses on the ethical use of data for the purpose of utilizing it to fulfill organizational strategies while at the same time meeting legal, moral and ethical standards.

## **DAT 510 Systems Analysis and Design 3 credits**

Learn the overall methodology for information systems development and understand the tools used for requirements determination, use case analysis, process modeling and data modeling. This course explores the method for general technology design, user interface design as well as program design. It includes examining how data analytics is used in the preceding tools and processes as both a tool and an intended outcome. This will be accomplished by looking through the lens of operating in a DevOps organization using agile delivery methods.

## **DAT 515 Data Visualization & Dashboard Reporting 3 credits**

Learn how to prepare data and design meaningful visualizations for effective communication and decision support. Analytical tools such as Tableau, R, and Excel, will be utilized to develop tables, charts, graphs, maps and dashboards for effective data analysis and storytelling.

## **DAT 520 Digital Transformation, Social Intelligence, and Analytics 3 credits**

Explore the five domains of digital transformation: Customers, Competition, Data, Innovation and Value. This course will identify how to harness customer networks and build platforms. An identification of how to turn data into assets and the exploration of innovation by rapid experimentation will be pursued utilizing data analytics as the prime driver. Understanding how to adapt a Value Proposition while learning how to master disruptive business models will be discovered.

## **DAT 525 Data Science, Analytics, and Artificial Intelligence 3 credits**

This course looks at a managerial approach to understanding business intelligence (BI) systems. Its objective is to help future managers use and understand analytics by providing a solid foundation of BI that is reinforced with hands-on practice. This includes an introduction of business intelligence, data analytics and data science. It explores descriptive, predictive and prescriptive analytics. It identifies big data concepts and tools. It also describes future trends, Analytics and Artificial Intelligence

## **DAT 530 Quantitative Research and Statistics 3 credits**

Learn the overall process of designing a research study from inception to completion and develop an academic literature review associated with a potential topic of interest for the capstone project. Understand hypothesis testing, how to use the appropriate instruments to collect data, and why reliability and validity are so important to the integrity of a research project.

## **DAT 535 Programming for Analysts 3 credits**

This course in programming provides for a broad range of students who need to work with data. Students will learn basic skills in programs like Python and/or the open-source R statistical package. It introduces the programming of statistical graphics simulation methods, numerical optimization, and computational linear algebra.

## **DAT 540 Business Intelligence and Decision Support Systems 3 credits**

This course provides an introduction to decision support systems (DSS) for business intelligence (BI). It looks at decision-making, data components, model components and the use of user interfaces. It explores designing a DSS using object-oriented technologies and implementing it with a recognition of how to evaluate a deployed system. Executive information and dashboards coupled with group decision support systems will be identified.

## **DAT 545 Big Data Analytics 3 credits**

This class will explore various aspects of big data analytics. Discover tools, technology, applications, use cases and research directions in industry. Initially it will explore challenges in big data and big data analytics. The Big Data Reference Model will be examined. A look at big data analytic tools such as Hadoop, Spark and Splunk will be completed. Looking at predictive models used in analytics and a framework for minimizing data leakage will be explored. Storing big data will be examined plus a study of big data cluster analysis will be done. Finally, non-linear extraction of big data analytics will be described along with data mining and large-scale data clustering.

## **DAT 599 Data Analytics Capstone 3 credits**

Demonstrate an understanding of data analytics through skills developed in this program. This course will afford students the opportunity to showcase a capstone data analytics project of their choice. Students will identify an issue to be resolved, or an opportunity to be exploited through their analysis. Elements from previous courses will be incorporated for research of a chosen topic and suggest potential solutions or future research to be done. Data will be analyzed and visualizations developed through this process. A faculty panel will judge the final capstone project.