DATA ANALYTICS (DATA)

101 Introduction to Data Analytics **3 credit hours**
Offered fall semester. Fee: $42.00.

Using a Statistics framework, this course covers the basic principles of what Data Analytics is. The course will review the steps to begin data analysis and provide an overview of how data analysis can be conducted in preparation for the advanced courses in the curriculum.

103 Introduction to Machine Learning **3 credit hours**
Offered spring semester. Fee: $42.00.

Machine learning is an integral part of data analytics, which deals with developing data-driven insights for better designs and decisions and gives computers the ability to learn without being explicitly programmed. Supervised and unsupervised machine learning will be covered. This introductory course gives an overview of machine learning concepts, techniques and algorithms.

Prerequisite: Data Analytics 101.

105 Introduction to Data Visualization **3 credit hours**
Offered fall semester. Fee: $42.00.

The primary focus of this course concerns the art and science of turning data into readable graphics known as data visualization using features in software applications such as Excel and Access. Students will also learn to evaluate the effectiveness of visualization designs, and think critically about each design decision, such as choice of color and choice of visual encoding as they begin to explore data visualization tools used by professionals in data analytics.

Prerequisite: Data Analytics 101.

201 Advanced Data Analytics **3 credit hours**
Offered spring semester. Fee: $42.00.

This course builds on the concepts learned in the introductory course for data analytics. It prepares students to gather, describe, and analyze data, and use advanced statistical tools to make decisions on operations, risk management, finance, marketing, etc. Topics include probability, statistics, hypothesis testing, regression, clustering, decision trees, and forecasting.

Prerequisite: Data Analytics 101.

206 Python for Data Analytics **3 credit hours**
Offered fall semester. Fee: $42.00

In this class students will learn how to wield the powerful Python tools used in the field of Data Analytics. The Python programming language, in conjunction with these tools, are used by most data analytics professionals. Students will learn how to manipulate, process, “clean,” analyze, and visualize data in Python. It is also a practical, modern introduction to scientific computing in Python, tailored for data-intensive applications. This is a course about the parts of the Python language and libraries one will need to effectively solve a broad set of data analysis problems.

Prerequisite: Computer Technology 241.

210 Data Warehouse Implementation **3 credit hours**
Offered fall semester. Fee: $42.00.

In this course, students will learn how to implement a data warehouse platform to support a business intelligence (BI) solution. Students will discover how to create a data warehouse, implement, extract, transform, and load (ETL) with SQL Server Integration Services (SSIS), and validate and cleanse data with SQL Server Data Quality Services (DQS) and SQL Server Master Data Services.

Prerequisite: Data Analytics 101.

214 Advanced Data Visualization **3 credit hours**
Offered spring semester. Fee: $42.00.

In this course, students discover how new and advanced data visualization tools used by industry professionals offer analytics capabilities that can help groups understand large and complex data which can arise from networks, high-dimensional point clouds, multivariate functions, heterogeneous personal data and ensembles. This course will enable the students to become familiar with innovative techniques and tools that combine data analysis with data visualization, from both algorithmic and implementation perspectives.

Prerequisite: Data Analytics 105.

216 Data Analysis in the Cloud **3 credit hours**
Offered spring semester. Fee: $42.00.

This course is designed to give students a comprehensive view of cloud computing including Big Data and Machine Learning. Students will learn a set of data mining tools used by industry professionals including interactive labs on Cloud Platforms (Google, AWS, Azure). This is a project-based course with extensive hands-on assignments.

Prerequisite: Data Analytics 101 and 103.

240 Field Placement **3 credit hours**
Offered fall and spring semester. Fee: $42.00.

This course provides students on the job training with a local business. One-hour lecture and eight hours internship a week (sixteen hours a week if offered in A or B-terms). Students will complete worksite assignments in a structured environment as determined by the instructor and the internship site supervisor. Attention will also be given to resume writing, interviewing, communication and other applicable workplace skills.

Prerequisite: Cumulative 2.75 GPA (or higher) of the courses required within the degree and successful completion of two Data Analytics courses. Instructor consent required.