**Course Abstract**

***If you need accommodations due to a disability, contact Disability Services in***

***Edison Hall Room 100, 732.906.2546.***

***To foster a productive learning environment, the College requires that all students adhere to the Code of Student Conduct which is published in the college catalog and website.***

**Course ID and Name: DSA 110 – Introduction to Data Science and Analytics**

**Department: Business and Computer Science**

Chairperson or Course Coordinator: Dr. Aslihan Cakmak

Office Location: ED123

E-mail Address: [ACakmak@Middlesexcc.edu](mailto:ACakmak@Middlesexcc.edu)

Telephone: 732-906-2526

**Prerequisites:** MAT 014 or appropriate score on the college placement test

**Co-requisites:** CSC 106

**Course Description:**

In this survey course, students will gain knowledge of foundational topics in the field of data science and analytics. It offers an overview of data science and data analytics, data collection and cleansing, data analysis, visualization, and dissemination. Students will examine different types of data, storage formats, and some of the tools available today for performing data science tasks. Prevalent software tools and techniques will be integrated into all topics.

**General Education Status:** N/A

**Credits: 3 Lecture Hours: 2 Lab Hours: 2**

**Learning Outcomes:**

1. Evaluate the role of data scientists and data analysts.
2. Identify commonly used data collection methods.
3. Describe common data cleansing methods.
4. Explain the role of the tools used for performing data analysis.
5. Describe how data visualization helps in data representations.
6. Identify which tools are used for processing structure versus unstructured data.
7. Explain how data science and data analytics are used in decision-making.

**Upon successful completion of this course, a student will be able to:**

1. Evaluate the role of data scientists and data analysts.
2. Identify commonly used data collections methods.
3. Describe the common data cleansing methods.
4. Explain the role of the tools used for performing data analysis.
5. Describe how data visualization helps in data representations.
6. Identify which tools are used for processing structured versus unstructured data.
7. Explain how data science and data analytics are used in decision-making.

**Course Content Areas:**

1. The need for data science and analysis
2. Problem solving with data
3. Types of data and data formats
4. Data collection methods
5. Software available for data science
6. Cleansing data
7. Extracting data
8. Storing and retrieving data
9. Querying and summarizing data
10. Basic functions for calculating data
11. Organizing data to formulate solutions
12. Analyzing organized data
13. Formatting processed data
14. Presenting results through visualization
15. Making recommendation