

# IT 0065 - DATA ANALYTICS/ VISUALIZATION USING TABLEAU

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## Catalog Description

Formerly known as CIS 91

Advisory: Completion of BUS 252 and IT 55 with grades of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Description: Learn how to use Tableau, a leading data analysis and visualization tool, to bring the world's data into views that everyone can use and understand. Go beyond basic charts by building powerful dashboards and drill down reports to support business decision makers or help explain visually the global impact of a single voice. (not transferable)

## Course Student Learning Outcomes

- CSLO #1: Research, analyze and evaluate data/information to solve business problems using Tableau.
- CSLO #2: Design and produce information/knowledge solutions incorporating current trends and best practices.
- CSLO #3: Employ data analytics concepts and terminology in professional communication.
- CSLO #4: Demonstrate marketable data analytics/visualization career skills.

## Effective Term

Fall 2023

## Course Type

Credit - Degree-applicable

## Contact Hours

72

## Outside of Class Hours

90

## Total Student Learning Hours

162

## Course Objectives

Lecture Objectives:

1. Explain the importance of data analysis
2. Explain how visual analytics improves decision making
3. Describe the Data, Information, Knowledge process
4. Define data aggregation and how it works
5. Compare and contrast various charting methods and describe when to use each
6. Explain how geocoding works

Laboratory Objectives:

1. Examine various data sources
2. Connect to multiple data sets
3. Apply filters and sorts for data sets

4. Build data visualizations such as trend forecasts
5. Geomap a data set to show results by location

## General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

## Articulation Information

- Not Transferable

## Methods of Evaluation

- Objective Examinations
  - Example: Students will be given weekly chapter review questions using True/False, Multiple Choice and Fill-In questions. Standard grading will be used to measure the level of understanding of the topics being covered. Sample Question - True or False, Tableau can import data from two dissimilar data types such as an Excel spreadsheet and an Oracle DB and those data sets can be joined for analytic purposes providing they have some common field.
- Problem Solving Examinations
  - Example: Students will be provided dissimilar data sets and will be required to import them into the software and create data join relationships on designated fields within the data. Students will submit the completed file to show that the correct fields have been joined using the appropriate join relationship option. Pass/Fail grading.
- Projects
  - Example: Students will be asked to create from scratch dashboards and drill-down reports using data retrieved from outside sources. Grading will be based on a rubric that included required elements, ease of use, and applied concepts.
- Skill Demonstrations
  - Example: Students will be required to complete lab exercises of creating prescribed analysis/visualization results to show they can apply the tools. A grading rubric will be provided.

## Repeatable

No

## Methods of Instruction

- Laboratory
- Lecture/Discussion
- Distance Learning

Lab:

1. Instructor will demonstrate how to connect to multiple data sources and create linkage between them for data analysis. Students will be required to replicate the activities using different data sets and determine on their own where linkages can be created to show an understanding of the processes and concepts. (Lab Objectives 1-3)
2. Instructor will discuss and demonstrate the concepts of geocoding data and students will utilize a data set with information such as Area Code to plot the data on a map. (Lab Objective 5)

Lecture:

1. Students will read the section in the textbook "How Visual Analytics Improves Decision Making" and then Instructor will lead the class in a discussion on the topic. (Lecture Objective 2)
2. Instructor will provide various visualizations of the same data set and discuss with class the ease of understanding what is being communicated via each. (Lecture Objective 5)

#### Distance Learning

1. Students will read the section in the textbook "How Visual Analytics Improves Decision Making" and then Instructor will lead the class in a discussion on the topic in the discussion area of the LMS. (Lecture Objective 2)
2. Instructor will provide various visualizations of the same data set and discuss with class in the LMS discussion area the ease of understanding what is being communicated via each style. (Lecture Objective 5)

## Typical Out of Class Assignments

### Reading Assignments

Students will read assigned chapters from the text, as well as, related content from the web. Example 1: Read section in text on Connecting to Your Data and be prepared to discuss. Example 2: Visit the site <https://www.tableau.com/about/blog> and review one of the case samples such as Texas Children's Hospital improves infant care outcomes and saves lives with data then share your thoughts on the reading in the LMS discussion.

### Writing, Problem Solving or Performance

Example 1: Students will be required to create a prescribed data visualization from a provided data set. It will need to match the example provided. Example 2: Students will be required to gather a data set related to an area that interests them and prepare a visualization that explains what the data shows.

### Other (Term projects, research papers, portfolios, etc.)

### Required Materials

- Zero to Data Viz as a Tableau Desktop Specialist
  - Author: John J Zugelder
  - Publisher: JZ Analytics Press
  - Publication Date: 2020
  - Text Edition:
  - Classic Textbook?:
  - OER Link:
  - OER:

### Other materials and-or supplies required of students that contribute to the cost of the course.