

## Data Analytics Certificate

### About this seminar

Participants in our *Data Analytics Certificate Training* will learn not only to summarize, analyze, and interpret data, but also to translate this into effective decision-making for complex business problems. They will learn techniques about database management, descriptive analytics, and data visualization, and gain experience in applying these tools and techniques in business for improving business decision making.

### Who will benefit from this seminar?

This program is intended for any business leader who would like to understand the essentials of business analytics, data mining and business intelligence management. This workshop will provide an overview of the topics in order to make it easier to understand the concepts, applications, principles and relationships of data mining, database development and usage. Basic rules for descriptive analytics and visualization will be discussed along with the most effective tools for communicating and sharing information about the collected data with a specific audience.

### About the Instructors

This program will be taught by several instructors from the Neff College of Business and Innovation:

**Dr. Hao-Wei Chen**, an Assistant Professor in the Department of Information, Operations and Technology Management.

**Dr. Benjamin George**, an Assistant Professor in the Department of IOTM.

**Dr. Paul Hong**, a Distinguished University Professor of Operations Management and Interim Chair of the Department of IOTM.

**Dr. Euisung Jung**, an Assistant Professor in the Department of IOTM.

**Dr. Blaine Stout**, the Principal of LBDS Inc., with a Ph.D. degree in Manufacturing and Technology Management.

**Dr. Yue Zhang**, an Associate Professor in Operations Management and Director of the Ph.D. program in Manufacturing and Technology Management.

### Additional Program Details

**Program Length:** four, 3-hour virtual sessions

#### Module 1: Introduction to Data Analytics

Learning outcomes:

- Understand basic concepts and principles of data analytics;
- Understand the applications and implications of data analytics in different industries;
- Learn how to extract strategic business insights from data.

#### Module 2: Database Management and SQL

Learning outcomes:

- Understand basic principles of relational databases;
- Understand database integrity rules, relationships and principles of SQL DDL/DML/Queries;
- Create and maintain database tables, queries and other database objects;
- Develop database applications using 4GL programming.

#### Module 3: Descriptive Analytics and Visualization

Learning outcomes:

- Understand principles of data preparation and manipulation, such as recording, select-case, aggregation, and computation;
- Apply the basics of descriptive analytics to any data;
- Do and don't when utilizing basic visualization, including box plot, bar graph, line chart, scatter chart;
- Create advanced visualization using tools (such as R or tableau).

#### Module 4: Case Exercise: Data Story-Telling and Decision-Making Presentation

Learning outcomes:

- Develop business situation hypotheses;
- Form questions and determine the required data;
- Determine the type of charts that best tell the story for the viewing audience;
- Understand how to verbally communicate the data story.

*If you wish to tailor this program for onsite training at your company, please contact Carrie Herr, CFCI Director, by calling 419-530-2037 or via email at [carrie.herr@utoledo.edu](mailto:carrie.herr@utoledo.edu).*