

# CERTIFICATION IN THE PRACTICE OF DATA ANALYTICS

Data Analytics is a burgeoning field due to the exponential growth of information created with today's sophisticated technologies. The Certification in Practice of Data Analytics (CPDA) offers working professionals the opportunity to acquire the knowledge and skills that support the management and use of big data. If you want to embark on this exciting career path or enhance the path you're on, the CPDA is for you.

Upon successful completion of the certificate program, you will be able to:

- Collect, clean, model and report data as well as build data products
- Analyze data to support informed data driven decisions

## PROGRAM ADVANTAGES

Busy professionals find this program meets their professional goals while providing a flexible learning experience. As a student in the program, you'll enjoy:

- A 100% distance learning format
- Being taught by top faculty from The Ohio State University's College of Engineering and Department of Statistics
- Courses that focus on the most important and marketable components of data analytics
- The option to take standalone courses for targeted learning or complete four courses to earn the certification
- Certification can be achieved in less than one year or longer if necessary

## WHAT YOU CAN EXPECT

The online delivery of the courses is composed of:

- Instructional material equivalent to a one semester credit hour class.
- All course lectures are recorded and available to you 24/7 through the university's Learning Management System called- Carmen.
- Course duration of approximately seven weeks.
- 4 CEUs are granted upon successful completion of each course.



## COURSE OFFERING SCHEDULE

### Autumn first term

- Introductory Statistics for Data Analytics
- Visual Analytics for Sensemaking
- Neural Networks and Deep Learning

### Autumn second term

- Data Mining
- Applied Machine Learning

### Spring first term

- Introductory Statistics for Data Analytics
- Visual Analytics for Sensemaking
- Neural Networks and Deep Learning

### Spring second term

- Data Mining
- Applied Machine Learning

### Summer term

- Introductory Statistics for Data Analytics
- Applied Machine Learning



# COURSES

## INTRODUCTORY STATISTICS FOR DATA ANALYTICS

Introductory Statistics for Data Analytics includes a short discussion of where data comes from, data exploration, probability and random variables, the basics of statistical inference (e.g., sampling and inferring upon population parameters using statistics), testing statistical hypotheses and building confidence intervals, and an introduction to regression. Students will use the R software package in this course.

## DATA MINING

This course focuses on data mining fundamentals and algorithms. Students will develop an appreciation for data preparation and transformation, an understanding of the data requirements for the various algorithms and learn when it is appropriate to use which algorithm.

## APPLIED MACHINE LEARNING

This course builds on the CPDA Data Mining course. Students will learn practical approaches to constructing scalable data pipelines for machine learning applications. Using various case studies, students will work through data ingestion, data pre-processing, and training and evaluating machine learning models on a variety of data types including tabular data, imagery/video, and natural languages (e.g., social media, literature, etc.).

## NEURAL NETWORKS AND DEEP LEARNING

This course builds on the CPDA Machine Learning and Optimization course. Students will learn the foundations of DL, the most powerful ANN architectures, practical and efficient methods for training large-scale and complex ANN structures, and about important applications of DL in a variety of fields such as computer vision, speech recognition, healthcare, and many others.

## VISUAL ANALYTICS FOR SENSEMAKING

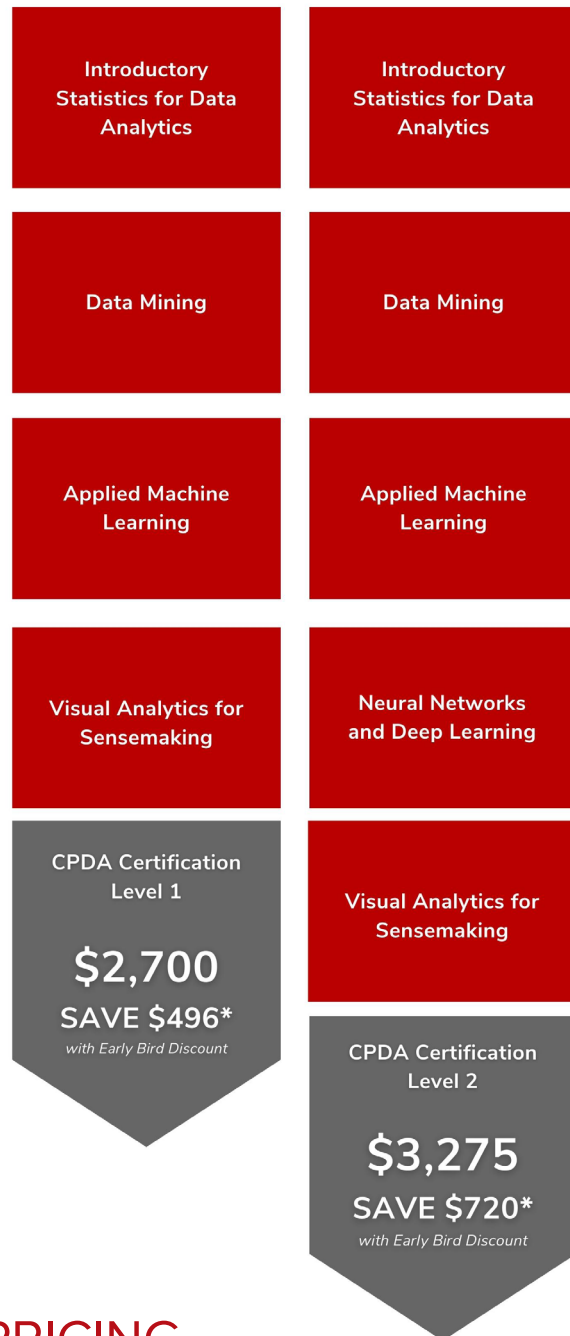
This course covers the visualization techniques that help people analyze massive amounts of digital data to combat overload and aid sensemaking with applications in retail and financial decision making, logistics, information systems, manufacturing, health care, energy and smart grids, cybersecurity and social networks.

# CONTACT

Professional and Distance Education Programs Office  
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# COURSE BUNDLING

Any of the CPDA courses can be taken individually for specific interests, or students can pursue a Level 1 or Level 2 certification. Students working toward their CPDA certification must follow a set course sequence (see below graphic) depending on their desired area of focus. Certification Level #2 includes deeper dives in Machine Learning.



# PRICING

Each course has a fee of \$799, though students save \$124 when they register three-weeks prior to the start date. Additional discounts are provided when completing Certification Levels 2 & 3.