uCertify

# Course Outline

## Data Science Fundamentals and Practical Approaches


04 Aug 2025

1. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions
2. Expert Instructor-Led Training
3. ADA Compliant & JAWS Compatible Platform
4. State of the Art Educator Tools
5. Award Winning Learning Platform (LMS)
6. Chapter & Lessons

   Syllabus

   Chapter 1: Preface

   Chapter 2: Fundamentals of Data Science

   Chapter 3: Data Preprocessing

   Chapter 4: Data Plotting and Visualization

   Chapter 5: Statistical Data Analysis

   Chapter 6: Machine Learning for Data Science

   Chapter 7: Time-Series Analysis

   Chapter 8: Deep Learning for Data Science

   Chapter 9: Social Media Analytics

   Chapter 10: Business Analytics

   Chapter 11: Big Data Analytics

   Videos and How To

## 1.  Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

## 2.  ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

## 3.  State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

## 4.  Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution
    2. Best Virtual Learning Solution
    3. Best Student Assessment Solution
    4. Best Postsecondary Learning Solution
    5. Best Career and Workforce Readiness Solution
    6. Best Instructional Solution in Other Curriculum Areas
    7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform
    2. Best Instructional Solution in Other Curriculum Areas
    3. Best Learning Relationship Management Solution

- **2019**
    1. Best Virtual Learning Solution
    2. Best Content Authoring Development or Curation Solution
    3. Best Higher Education Learning Management Solution (LMS)

- **2020**
    1. Best College and Career Readiness Solution
    2. Best Cross-Curricular Solution
    3. Best Virtual Learning Solution

## 5. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

## Syllabus

### Chapter 1: Preface

### Chapter 2: Fundamentals of Data Science

- Introduction to data science
- Why learn data science?
- Data analytics lifecycle
- Types of data analysis
- Types of jobs in data analytics
- Data science tools

- Fundamental areas of study in data science
- Role of SQL in data science
- Pros and cons of data science
- Conclusion
- References
- Points to remember

## Chapter 3: Data Preprocessing

- Introduction to data preprocessing
- Data types and forms
- Possible data error types
- Various data preprocessing operations
- Conclusion
- References
- Points to remember

## Chapter 4: Data Plotting and Visualization

- Introduction to data visualization
- Visual encoding

- Data visualization software
- Data visualization libraries
- Basic data visualization tools
- Specialized data visualization tools
- Advanced data visualization tools
- Visualization of geospatial data
- Data visualization types
- Conclusion
- References
- Points to remember

## Chapter 5: Statistical Data Analysis

- Role of statistics in data science
- Kinds of statistics
- Probability theory
- Conclusion
- References
- Points to remember

## Chapter 6: Machine Learning for Data Science

- Overview of machine learning
- Supervised machine learning
- Unsupervised machine learning
- Reinforcement learning
- Conclusion
- References
- Points to remember

## Chapter 7: Time-Series Analysis

- Overview of time-series analysis
- Components of time-series
- Time-series forecasting models
- Conclusion
- References
- Points to remember

## Chapter 8: Deep Learning for Data Science

- Introduction to TensorFlow
- Pytorch

- Deep learning primitives
- Convolutional Neural Network (CNN)
- TensorFlow and CNN
- CNN and data analysis
- AutoEncoder
- Conclusion
- References
- Points to remember

## Chapter 9: Social Media Analytics

- Overview of social media analytics
- Seven layers of social media analytics
- Social media analytics cycle
- Key social media analytics methods
- Accessing social media data
- Challenges to social media analytics
- Conclusion
- References

- Points to remember

## Chapter 10: Business Analytics

- An overview of business analytics
- The business analytics lifecycle
- Basic tools used in business analytics
- Main applications in business analytics
- Challenges faced in business analytics
- Conclusion
- References
- Points to Remember

## Chapter 11: Big Data Analytics

- An overview of Big Data
- Hadoop
- HDFS (Hadoop Distributed File System)
- Interacting with HDFS
- Interacting with HDFS from Python applications
- Conclusion

- References
- Points to remember

## You can’t stay away! Get

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