uCertify

Course Outline

Data Science for Business Professionals

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: Data Science Overview

   Chapter 3: Mathematics Essentials

   Chapter 4: Statistics Essentials

   Chapter 5: Exploratory Data Analysis

   Chapter 6: Data Preprocessing

   Chapter 7: Feature Engineering

   Chapter 8: Machine Learning Algorithms

   Chapter 9: Productionizing Machine Learning Models

   Chapter 10: Data Flows in Enterprises

   Chapter 11: Introduction to Databases

   Chapter 12: Introduction to Big Data

   Chapter 13: DevOps for Data Science

   Chapter 14: Introduction to Cloud Computing

   Chapter 15: Deploy Model to Cloud

   Chapter 16: Introduction to Business Intelligence

   Chapter 17: Data Visulazation Tools

   Chapter 18: Industry Use Case 1 - Form Assist

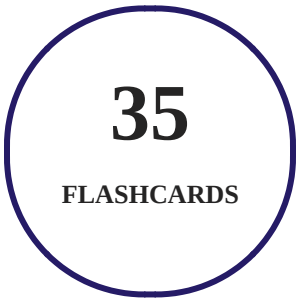
   Chapter 19: Industry Use Case 2 - People Reporter

   Chapter 20: Do It Your Self Challenges

Videos and How To

1. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



2. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.

3. 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.

4.  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.

5.  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.

6.  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

7. 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: Data Science Overview

- Evolution of data analytics
- Define data science
- Domain Knowledge
- Mathematical and Scientific Techniques
- Tools and Technology
- Data science analysis types

- Data science job roles
- ML model development process
- Data Visualizations
- Result Communication
- Responsible and Ethical AI
- Career in Data Science
- Conclusion

Chapter 3: Mathematics Essentials

- Introduction to linear algebra
- Scalar, vectors, matrices, and tensors
- The determinant
- Eigenvalues and Eigenvectors
- Eigenvalue decomposition and Singular Value Decomposition (SVD)
- Principal Component Analysis
- Multivariate Calculus
- Differential Calculus
- Multiple variables
- Definite vs. Indefinite Integrals

- Conclusion

Chapter 4: Statistics Essentials

- Introduction to probability and statistics
- Descriptive statistics
- Conditional probability
- Random variables
- Inferential statistics
- Conclusion

Chapter 5: Exploratory Data Analysis

- What is EDA?
- Understanding data
- Methods of EDA
- Key concepts of EDA
- Conclusion

Chapter 6: Data Preprocessing

- Introduction to data preprocessing

- Methods in data preprocessing
- Conclusion

Chapter 7: Feature Engineering

- Introduction to feature engineering
- Feature engineering techniques
- Applying feature engineering
- Conclusion

Chapter 8: Machine Learning Algorithms

- Introduction to machine learning
- Top 10 Algorithms of Machine Learning Explained
- Building a machine learning model
- Conclusion

Chapter 9: Productionizing Machine Learning Models

- Types of ML production system
- Introduction to REST APIs
- Flask framework
- Ml Model User Interface

- Conclusion

Chapter 10: Data Flows in Enterprises

- Introducing data pipeline
- Designing data pipeline
- ETL vs. ELT
- Scheduling jobs
- Messaging Queue
- Passing Arguments to Data Pipeline
- Conclusion

Chapter 11: Introduction to Databases

- Modern databases and terminology
- Relational database or SQL database
- Connect Python to Postgres
- Document-oriented database or No-SQL
- Graph databases
- Filesystem as storage
- Conclusion

Chapter 12: Introduction to Big Data

- Introducing Big Data
- Introducing Hadoop
- Setting-up a Hadoop Cluster
- Word-count MapReduce Program
- Conclusion

Chapter 13: DevOps for Data Science

- Introduction to DevOps
- Agile methodology, CI/CD, and DevOps
- DevOps for data science
- Conclusion

Chapter 14: Introduction to Cloud Computing

- Introducing cloud computing
- Types of Cloud Services
- Types of cloud infrastructure
- Data science and cloud computing

- Market growth of cloud
- Conclusion

Chapter 15: Deploy Model to Cloud

- Register for GCP free account
- GCP console
- Create VM and its properties
- Connecting and Uploading Code to VM
- Executing Python Model On Cloud
- Access the Model Via Browser
- Scaling the resources in Cloud
- Conclusion

Chapter 16: Introduction to Business Intelligence

- What is business intelligence?
- Business intelligence analysis
- Business intelligence process
- Business Intelligence Trends
- Gartner 2019 Magic Quadrant

- Conclusion

Chapter 17: Data Visulazation Tools

- Introduction to data visualization
- Data visualization tools
- Introduction to Microsoft Power BI
- Conclusion

Chapter 18: Industry Use Case 1 - Form Assist

- Abstract
- Introduction
- Related Work
- Proposed work
- Data augmentation
- Optimization
- Feature extraction
- Image thresholding
- Classifier
- Results

- Conclusion
- Acknowledgment

Chapter 19: Industry Use Case 2 - People Reporter

- Abstract
- Introduction
- Event detection
- Work architecture
- Results
- Nipah Virus Outbreak in Kerala
- Conclusion
- Acknowledgment

Chapter 20: Do It Your Self Challenges

- DIY challenge 1 - Analyzing the pathological slide for blood analysis
- DIY challenge 2 - IoT based weather monitoring system
- DIY challenge 3 - Facial image-based BMI calcula... disease; this challenge comes from this domain.
- DIY challenge 4 - Chatbot assistant for Tourism in North East
- DIY challenge 5 - Assaying and grading of fruits for e-procurement

- Conclusion

You can’t stay away! Get in touch with our team to

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