uCertify

Course Outline

redictive analytics: Data Mining, Machine Learning, and Data Science for Practitioners



28 Mar 2024

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3. Exercises, Quizzes, Flashcards & Glossary

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4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
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Here's what you get

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1. Course Objective

Predictive analytics is all about foreseeing the future and making smarter and faster business decisions. Business analytics is often characterized by three levels/echelons representing the hierarchical nature of the term—descriptive, predictive, and prescriptive. Organizations usually start with descriptive analytics, then move into predictive analytics, and finally reach prescriptive analytics. Learn predictive analytics with uCertify's course Predictive analytics: Data Mining, Machine Learning, and Data Science for Practitioners. The course has well descriptive interactive lessons containing pre and post-assessment questions, knowledge checks, quizzes, flashcards, and glossary terms to get a detailed understanding of predictive analytics.

2. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

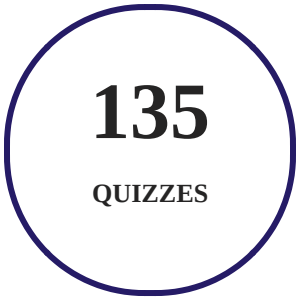
3. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.



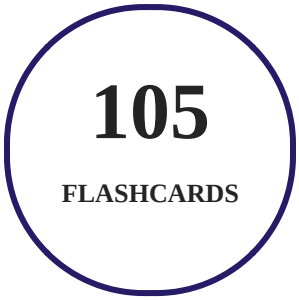
4. Quizzes

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.



5. 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.



6. 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.



7. 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.

8. 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.

9. 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.

10. 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

11. 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: Introduction

- About This eBook
- Foreword

Chapter 2: Introduction to Analytics

- What's in a Name?
- Why the Sudden Popularity of Analytics and Data Science?
- The Application Areas of Analytics
- The Main Challenges of Analytics
- A Longitudinal View of Analytics
- A Simple Taxonomy for Analytics
- The Cutting Edge of Analytics: IBM Watson
- Summary
- References

Chapter 3: Introduction to Predictive Analytics and Data Mining

- What Is Data Mining?
- What Data Mining Is Not
- The Most Common Data Mining Applications
- What Kinds of Patterns Can Data Mining Discover?
- Popular Data Mining Tools
- The Dark Side of Data Mining: Privacy Concerns

- Summary
- References

Chapter 4: Standardized Processes for Predictive Analytics

- The Knowledge Discovery in Databases (KDD) Process
- Cross-Industry Standard Process for Data Mining (CRISP-DM)
- SEMMA
- SEMMA Versus CRISP-DM
- Six Sigma for Data Mining
- Which Methodology Is Best?
- Summary
- References

Chapter 5: Data and Methods for Predictive Analytics

- The Nature of Data in Data Analytics
- Preprocessing of Data for Analytics
- Data Mining Methods
- Prediction

- Classification
- Decision Trees
- Cluster Analysis for Data Mining
- k-Means Clustering Algorithm
- Association
- Apriori Algorithm
- Data Mining and Predictive Analytics Misconceptions and Realities
- Summary
- References

Chapter 6: Algorithms for Predictive Analytics

- Naive Bayes
- Nearest Neighbor
- Similarity Measure: The Distance Metric
- Artificial Neural Networks
- Support Vector Machines
- Linear Regression
- Logistic Regression

- Time-Series Forecasting
- Summary
- References

Chapter 7: Advanced Topics in Predictive Modeling

- Model Ensembles
- Bias–Variance Trade-off in Predictive Analytics
- Imbalanced Data Problems in Predictive Analytics
- Explainability of Machine Learning Models for Predictive Analytics
- Summary
- References

Chapter 8: Text Analytics, Topic Modeling, and Sentiment Analysis

- Natural Language Processing
- Text Mining Applications
- The Text Mining Process
- Text Mining Tools
- Topic Modeling
- Sentiment Analysis

- Summary
- References

Chapter 9: Big Data for Predictive Analytics

- Where Does Big Data Come From?
- The Vs That Define Big Data
- Fundamental Concepts of Big Data
- The Business Problems That Big Data Analytics Addresses
- Big Data Technologies
- Data Scientists
- Big Data and Stream Analytics
- Data Stream Mining
- Summary
- References

Chapter 10: Deep Learning and Cognitive Computing

- Introduction to Deep Learning
- Basics of “Shallow” Neural Networks

- Elements of an Artificial Neural Network
- Deep Neural Networks
- Convolutional Neural Networks
- Recurrent Networks and Long Short-Term Memory Networks
- Computer Frameworks for Implementation of Deep Learning
- Cognitive Computing
- Summary
- References

Chapter 11: Appendix A: KNIME and the Landscape of Tools for Business Analytics and Data Science

- Project Constraints: Time and Money
- The Learning Curve
- The KNIME Community
- Correctness and Flexibility
- Extensive Coverage of Data Science Techniques
- Data Science in the Enterprise
- Summary and Conclusions
- Acknowledgment

Chapter 12: Appendix B: Videos

- Introduction to Predictive Analytics
- Introduction to Predictive Analytics and Data Mining
- The Data Mining Process
- Data and Methods in Data Mining
- Data Mining Algorithms
- Text Analytics and Text Mining
- Big Data Analytics
- Predictive Analytics Best Practices
- Summary

Videos and How To

uCertify course includes videos to help understand concepts. It also includes How Tos that help learners in accomplishing certain tasks.

45	08:49
VIDEOS	HOURS

12. Practice Test

Here's what you get

66	66
PRE-ASSESSMENTS QUESTIONS	POST-ASSESSMENTS QUESTIONS

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

13. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations

- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Introduction to Predictive Analytics and Data Mining

- Creating a Decision Tree in Python
- Creating a Decision Tree in KNIME

Data and Methods for Predictive Analytics

- Running k-Means Clustering Algorithm in KNIME

Algorithms for Predictive Analytics

- Using the k-Nearest Neighbor Algorithm
- Using ANN and SVM for Prediction Type Analytics Problems
- Implementing Linear Regression in Python
- Implementing Linear Regression Model in KNIME

Advanced Topics in Predictive Modeling

- Showcasing Better Practices With a Customer Churn Analysis

Text Analytics, Topic Modeling, and Sentiment Analysis

- Performing Topic Modeling
- Performing Sentiment Analysis

Here's what you get

10	10	01:15
LIVE LABS	VIDEO TUTORIALS	HOURS

14. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

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