uCertify

Course Outline

Artificial Intelligence for Business



27 Mar 2024

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1. Course Objective

Get hands-on experience in Analytics, Data Science, & Artificial Intelligence: Systems for Decision Support with the Artificial Intelligence for Business course and lab. The course provides a vivid introduction to technologies collectively called analytics and the fundamental methods, techniques, and software used to design and develop these systems with clear and approachable lesson flowcharts, and other tools. It illustrates how to enable technologies, including AI, machine learning, robotics, chatbots, and IoT. The Artificial Intelligence for Business course will assist you in learning artificial neural networks, machine learning, neural networks, and many more.

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.



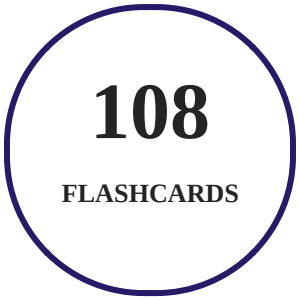
4. Quizzes

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: Preface

- About This eBook
- Foreword

Chapter 2: What Is Artificial Intelligence?

- What Is Intelligence?
- Testing Machine Intelligence
- The General Problem Solver
- Strong and Weak Artificial Intelligence
- Artificial Intelligence Planning
- Learning over Memorizing
- Lesson Takeaways

Chapter 3: The Rise of Machine Learning

- Practical Applications of Machine Learning
- Artificial Neural Networks
- The Fall and Rise of the Perceptron
- Big Data Arrives
- Lesson Takeaways

Chapter 4: Zeroing in on the Best Approach

- Expert System Versus Machine Learning

- Supervised Versus Unsupervised Learning
- Backpropagation of Errors
- Regression Analysis
- Lesson Takeaways

Chapter 5: Common AI Applications

- Intelligent Robots
- Natural Language Processing
- The Internet of Things
- Lesson Takeaways

Chapter 6: Putting AI to Work on Big Data

- Understanding the Concept of Big Data
- Teaming Up with a Data Scientist
- Machine Learning and Data Mining: What’s the Difference?
- Making the Leap from Data Mining to Machine Learning
- Taking the Right Approach
- Lesson Takeaways

Chapter 7: Weighing Your Options

- Lesson Takeaways

Chapter 8: What Is Machine Learning?

- How a Machine Learns
- Working with Data
- Applying Machine Learning
- Different Types of Learning
- Lesson Takeaways

Chapter 9: Different Ways a Machine Learns

- Supervised Machine Learning
- Unsupervised Machine Learning
- Semi-Supervised Machine Learning
- Reinforcement Learning
- Lesson Takeaways

Chapter 10: Popular Machine Learning Algorithms

- Decision Trees

- k-Nearest Neighbor
- k-Means Clustering
- Regression Analysis
- Näive Bayes
- Lesson Takeaways

Chapter 11: Applying Machine Learning Algorithms

- Fitting the Model to Your Data
- Choosing Algorithms
- Ensemble Modeling
- Deciding on a Machine Learning Approach
- Lesson Takeaways

Chapter 12: Words of Advice

- Start Asking Questions
- Don’t Mix Training Data with Test Data
- Don’t Overstate a Model’s Accuracy
- Know Your Algorithms

- Lesson Takeaways

Chapter 13: What Are Artificial Neural Networks?

- Why the Brain Analogy?
- Just Another Amazing Algorithm
- Getting to Know the Perceptron
- Squeezing Down a Sigmoid Neuron
- Adding Bias
- Lesson Takeaways

Chapter 14: Artificial Neural Networks in Action

- Feeding Data into the Network
- What Goes on in the Hidden Layers
- Understanding Activation Functions
- Adding Weights
- Adding Bias
- Lesson Takeaways

Chapter 15: Letting Your Network Learn

- Starting with Random Weights and Biases
- Making Your Network Pay for Its Mistakes: The Cost Function
- Combining the Cost Function with Gradient Descent
- Using Backpropagation to Correct for Errors
- Tuning Your Network
- Employing the Chain Rule
- Batching the Data Set with Stochastic Gradient Descent
- Lesson Takeaways

Chapter 16: Using Neural Networks to Classify or Cluster

- Solving Classification Problems
- Solving Clustering Problems
- Lesson Takeaways

Chapter 17: Key Challenges

- Obtaining Enough Quality Data
- Keeping Training and Test Data Separate
- Carefully Choosing Your Training Data
- Taking an Exploratory Approach

- Choosing the Right Tool for the Job
- Lesson Takeaways

Chapter 18: Harnessing the Power of Natural Language Processing

- Extracting Meaning from Text and Speech with NLU
- Delivering Sensible Responses with NLG
- Automating Customer Service
- Reviewing the Top NLP Tools and Resources
- Lesson Takeaways

Chapter 19: Automating Customer Interactions

- Choosing Natural Language Technologies
- Review the Top Tools for Creating Chatbots and Virtual Agents
- Lesson Takeaways

Chapter 20: Improving Data-Based Decision-Making

- Choosing Between Automated and Intuitive Decision-Making
- Gathering Data in Real Time from IoT Devices
- Reviewing Automated Decision-Making Tools

- Lesson Takeaways

Chapter 21: Using Machine Learning to Predict Events and Outcomes

- Machine Learning Is Really about Labeling Data
- Looking at What Machine Learning Can Do
- Use Your Power for Good, Not Evil: Machine Learning Ethics
- Review the Top Machine Learning Tools
- Lesson Takeaways

Chapter 22: Building Artificial Minds

- Separating Intelligence from Automation
- Adding Layers for Deep Learning
- Considering Applications for Artificial Neural Networks
- Reviewing the Top Deep Learning Tools
- Lesson Takeaways

12. Practice Test

Here's what you get

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.  Performance Based Labs

uCertify's performance-based labs are simulators that provides virtual environment. Labs deliver hands on experience with minimal risk and thus replace expensive physical labs. uCertify Labs are cloud-based, device-enabled and can be easily integrated with an LMS. Features of uCertify labs:

- Provide hands-on experience in a safe, online environment
- Labs simulate real world, hardware, software & CLI environment
- Flexible and inexpensive alternative to physical Labs
- Comes with well-organized component library for every task
- Highly interactive - learn by doing
- Explanations and remediation available
- Videos on how to perform

Lab Tasks

- Analyzing the Artificial Intelligence, Machine Learning, and Deep Learning
- Analyzing the Similarities and Differences Betwe...telligence, Machine Learning, and Deep Learning.
- Understanding Concepts Used to Automate Decision-Making Processes
- Understanding Approaches Used to Automate Computer Decision-Making Processes
- Analyzing Algorithms to Parse and Analyze Data
- Identifying Algorithms to Parse and Analyze Data
- Summarizing Algorithms to Parse and Analyze Data
- Summarizing Methods Used to Automate Computer Decision-Making Processes

Here's what you get

8

PERFORMANCE BASED LAB

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