

**uCertify**

# Course Outline

**Regression Analysis with R**



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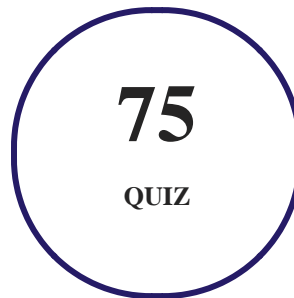
1. Course Objective
2. Exercises, Quizzes, Flashcards & Glossary  
Number of Questions
3. Expert Instructor-Led Training
4. ADA Compliant & JAWS Compatible Platform
5. State of the Art Educator Tools
6. Award Winning Learning Platform (LMS)
7. Chapter & Lessons  
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Chapter 3: Basic Concepts – Simple Linear Regression  
Chapter 4: More Than Just One Predictor – MLR  
Chapter 5: When the Response Falls into Two Categories – Logistic Regression  
Chapter 6: Data Preparation Using R Tools  
Chapter 7: Avoiding Overfitting Problems - Achieving Generalization  
Chapter 8: Going Further with Regression Models  
Chapter 9: Beyond Linearity – When Curving Is Much Better  
Chapter 10: Regression Analysis in Practice  
Videos and How To

## 1. Course Objective

Regression Analysis with R course and lab will give you a rundown explaining what regression analysis is, explaining you the process from scratch. Lab simulates real-world, hardware, software, and command-line interface environments and can be mapped to any textbook, course, or training. The course and lab provide you with the knowledge to work with multiple regression in action, logistic regression, data preparation, achieving generalization, online and batch learning; and many more.

## 2. Quiz

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.



## 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

- What this course covers
- To get the most out of this course
- Conventions used

#### Chapter 2: Getting Started with Regression

- Going back to the origin of regression
- Regression in the real world
- Understanding regression concepts
- Regression versus correlation
- Discovering different types of regression
- The R environment

- Installing R
- RStudio
- R packages for regression
- Summary

### Chapter 3: Basic Concepts – Simple Linear Regression

- Association between variables – covariance and correlation
- Searching linear relationships
- Least squares regression
- Creating a linear regression model
- Modeling a perfect linear association
- Summary

### Chapter 4: More Than Just One Predictor – MLR

- Multiple linear regression concepts
- Building a multiple linear regression model
- Multiple linear regression with categorical predictor
- Gradient Descent and linear regression
- Polynomial regression

- Summary

## Chapter 5: When the Response Falls into Two Categories – Logistic Regression

- Understanding logistic regression
- Generalized Linear Model
- Multiple logistic regression
- Multinomial logistic regression
- Summary

## Chapter 6: Data Preparation Using R Tools

- Data wrangling
- Finding outliers in data
- Scale of features
- Discretization in R
- Dimensionality reduction
- Summary

## Chapter 7: Avoiding Overfitting Problems - Achieving Generalization

- Understanding overfitting



- Feature selection
- Regularization
- Summary

## Chapter 8: Going Further with Regression Models

- Robust linear regression
- Bayesian linear regression
- Count data model
- Summary

## Chapter 9: Beyond Linearity – When Curving Is Much Better

- Nonlinear least squares
- Multivariate Adaptive Regression Splines
- Generalized Additive Model
- Regression trees
- Support Vector Regression
- Summary

## Chapter 10: Regression Analysis in Practice

- Random forest regression with the Boston dataset

- Classifying breast cancer using logistic regression
- Regression with neural networks
- Summary

You can't stay away! Get



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