



Certificate in R Programming

Vskills Certifications

Vskills Brochure



Certificate in R Programming

R is a statistical programming language that allows you to build probabilistic models, perform data science, and build machine learning algorithms. R has a great package ecosystem that enables developers to conduct data visualization to data analysis.

Why should one take this certification?

This online course covers advanced-level concepts in R programming and demonstrates industry best practices. This is an advanced R course with an intensive focus on machine learning concepts in depth and applying them in the real world with R.

The course starts off with pre-model-building activities such as univariate and bivariate analysis, outlier detection, and missing value treatment featuring the mice package. Then we take a look at linear, non-linear regression modeling and classification models, and will check out the math behind the working of classification algorithms.

Who will benefit from taking this certification?

Job seekers looking for employment in various IT companies, PSUs or MNCs. Certification in R Programming will benefit data science professionals, data analyst and students who want to learn R programming.

By the end of the course, you will have a solid knowledge of machine learning and the R language itself. You'll also solve numerous coding challenges throughout the course.

Test Details

- **Duration:** 60 minutes
- **No. of questions:** 50
- **Maximum marks:** 50, Passing marks: 25 (50%)

There is no negative marking in this module.

Fee Structure

Rs. 3,499/- (Excludes taxes) *

* Fees may change without prior notice, please refer <http://www.vskills.in> for updated fees

Companies that hire Vskills Certificate in R Programming Professionals

IT companies, MNCs, Consultancies hire R Programmers for Data Science related opportunities. Companies employing Linux shell scripting include Capgemini, Larsen & Toubro, TCS, Wipro, Zensar, Accenture, Infosys etc.

Table of Contents

1. R Language Basics

- 1.1 Overview of R Programming Language
- 1.2 Installing R
- 1.3 R Interactive Command Line
- 1.4 R Scripts
- 1.5 Hello World
- 1.6 R Data types
- 1.7 Comments
- 1.8 Constants and Variables
- 1.9 Operators
- 1.10 R Conditional Statements
- 1.11 R Functions
- 1.12 R Arrays
- 1.13 R Strings
- 1.14 R Lists
- 1.15 Vectors in R
- 1.16 R Matrices
- 1.17 Factors in R
- 1.18 Data Frames in R
- 1.19 R Package and Repositories

2. Introduction to Statistics

- 2.1 Terminologies
- 2.2 Inferential Statistics
- 2.3 Descriptive Statistics
- 2.4 Frequency Distribution
- 2.5 Cumulative Frequency Distribution
- 2.6 Central Limit Theorem
- 2.7 Valid Statistical Conclusions
- 2.8 Graphical Methods
- 2.9 Univariate Analysis
- 2.10 Bivariate Analysis
- 2.11 Regression

3. Introduction to Probability

- 3.1 Concepts
- 3.2 Permutation and Combination
- 3.3 Probabilistic Distributions
- 3.4 Continuous Variables PDFs
- 3.5 Discrete Variables PDFs

4. Regression Modelling

- 4.1 Regression Modeling Basics
- 4.2 Correlation and Regression Coefficient
- 4.3 Linear Regression
- 4.4 Interpreting Regression Results
- 4.5 Interaction Effects
- 4.6 Residual Analysis
- 4.7 Cook's Distance
- 4.8 Hypothesis Testing
- 4.9 k-Fold Cross Validation
- 4.10 GAM - Generalized Additive Models

5. Classification Models

- 5.1 Naive Bayes Classifier
- 5.2 k-Nearest Neighbors Classifier
- 5.3 RPart, cTree, and C5.0
- 5.4 caret Package
- 5.5 Variable selection with RFE, varImp, and Boruta

6. Machine Learning

- 6.1 Random Forest Classifier
- 6.2 Gradient Boosting and GBM
- 6.3 Regularization - Ridge, Lasso, and Elasticnet
- 6.4 XGBoost

7. Unsupervised Learning

- 7.1 Clustering
- 7.2 k-means Clustering
- 7.3 Principal Components Analysis
- 7.4 Determining Optimum Number of Clusters
- 7.5 Hierarchical Clustering
- 7.6 Affinity Propagation
- 7.7 Building Recommendation Engines

8. Time Series Analysis and Forecasting

- 8.1 Stationarity, De-Trend, and De-Seasonalize
- 8.2 Lags, ACF, PACF, and CCF
- 8.3 Moving Average and Exponential Smoothing
- 8.4 Double Exponential and Holt Winters
- 8.5 ARIMA Modelling

9. Text Analytics

- 9.1 Corpus, TDM, TF-IDF, and Word Cloud
- 9.2 Cosine Similarity and Latent Semantic Analysis
- 9.3 Extracting Topics with Latent Dirichlet Allocation
- 9.4 Sentiment Scoring with tidytext and Syuzhet
- 9.5 Classifying Texts with RTextTools

10. ggplot2

- 10.1 Installation
- 10.2 Usage
- 10.3 ggplot df
- 10.4 The Layers
- 10.5 The Labels
- 10.6 The Theme
- 10.7 The Facets
- 10.8 Plot multiple timeseries on same ggplot
- 10.9 Bar charts
- 10.10 Adjust X and Y axis limits
- 10.11 Legend - Deleting and Changing Position
- 10.12 Plot margin and background
- 10.13 Annotation

11. Speeding Up R Code

- 11.1 doParallel and foreach
- 11.2 DPLYR
- 11.3 Data.Table
- 11.4 RCpp

Sample Questions

1. How many entries are present in vector named x, in expression - `x <- c(10.4, 5.6, 3.1, 6.4, 21.7)`
 - A. 4
 - B. 5
 - C. 6
 - D. 7

2. Select the escape sequence for newline, in character strings of R programming language
 - A. `'\n'`
 - B. `"\n"`
 - C. `;\n`
 - D. None of these

3. What is the default character used to separate arguments in the result, of the `paste()` function in R programming language
 - A. `'`
 - B. `"`
 - C. `;`
 - D. None of these

4. Select the binary integral division operator of R programming language
 - A. `%^%`
 - B. `%*%`
 - C. `%%`
 - D. None of these

5. Which character indicates comment in R programming language
 - A. `.`
 - B. `#`
 - C. `$`
 - D. `;`

Answers: 1 (B), 2 (D), 3 (D), 4 (D), 5 (B)

Certifications

- ▶ **Accounting, Banking & Finance**
 - Certified GST Professional
 - Certified AML-KYC Compliance Officer
 - Certified Business Accountant
 - Certified BASEL III Professional
 - Certified GAAP Accounting Standards Professional
 - Certified Treasury Markets Professional
- ▶ **Big Data**
 - Certified Hadoop and Mapreduce Professional
- ▶ **Cloud Computing**
 - Certified Cloud Computing Professional
- ▶ **Design**
 - Certified Interior Designer
- ▶ **Digital Media**
 - Certified Social Media Marketing Professional
 - Certified Inbound Marketing Professional
 - Certified Digital Marketing Professional
- ▶ **Foreign Trade**
 - Certified Export Import (Foreign Trade) Professional
- ▶ **Health, Nutrition and Well Being**
 - Certified Fitness Instructor
- ▶ **Hospitality**
 - Certified Restaurant Team Member (Hospitality)
- ▶ **Human Resources**
 - Certified HR Compensation Manager
 - Certified HR Staffing Manager
 - Certified Human Resources Manager
 - Certified Performance Appraisal Manager
- ▶ **Office Skills**
 - Certified Data Entry Operator
 - Certified Office Administrator
- ▶ **Project Management**
 - Certified Master in Project Management
 - Certified Scrum Specialist
- ▶ **Real Estate**
 - Certified Real Estate Consultant
- ▶ **Marketing**
 - Certified Marketing Manager
- ▶ **Quality**
 - Certified Six Sigma Green Belt Professional
 - Certified Six Sigma Black Belt Professional
 - Certified TQM Professional
- ▶ **Logistics & Supply Chain Management**
 - Certified International Logistics Professional
 - Certified Logistics & SCM Professional
 - Certified Supply Chain Management Professional
- ▶ **Legal**
 - Certified IPR & Legal Manager
 - Certified Labour Law Analyst
 - Certified Business Law Analyst
 - Certified Corporate Law Analyst
- ▶ **Information Technology**
 - Certified Angular JS Professional
 - Certified Basic Network Support Professional
 - Certified Business Intelligence Professional
 - Certified Core Java Developer
 - Certified E-commerce Professional
 - Certified IT Support Professional
 - Certified PHP Professional
 - Certified Selenium Professional
- ▶ **Mobile Application Development**
 - Certified Android Apps Developer
 - Certified iPhone Apps Developer
- ▶ **Security**
 - Certified Ethical Hacking and Security Professional
 - Certified Network Security Professional
- ▶ **Management**
 - Certified Corporate Governance Professional
 - Certified Corporate Social Responsibility Professional
 - Certified Leadership Skills Professional
- ▶ **Life Skills**
 - Certified Business Communication Specialist
 - Certified Public Relations Officer
- ▶ **Media**
 - Certified Advertising Manager
 - Certified Advertising Sales Professional
- ▶ **Sales, BPO**
 - Certified Sales Manager
 - Certified Telesales Executive

& many more job related certifications

Contact us at:
V-Skills
011-473 44 723 or info@vskills.in
www.vskills.in