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PHOENIX TS

## Supervised Machine Learning: Regression and Time-Series Analysis Training

This 2-day course teaches data scientists and analysts how to forecast trends based on multiple variable and factors. Students will learn how to forecast economic trends, utilization rates, customer demand, as well as a variety of other activities.

**Due to Covid-19 safety restrictions** PhoenixTS will temporarily be unable to provide food to our students who attend class at our Training Center; however, our Break Areas are **currently open** where students will find a constant supply of Coffee, Tea and Water. Students may bring their own lunch and snacks to eat in our breakrooms or at their seat in the classroom or eat out at one of the many nearby restaurants.

### Course Overview

This 2-day data science focused training course explores regression and time-series analysis. At the conclusion of this course, students should be able to do the following:

- Build single and multivariate regression models
- Assess statistical significance and validate models for explanatory power and bias
- Use time-series models to identify seasonality patterns and create forecasts for cyclical data

### Schedule

Currently, there are no public classes scheduled. Please contact a Phoenix TS Training Consultant to



discuss hosting a private class at 240-667-7757.

## Course Outline

### Introduction to Regression and Time-Series Analysis

- Commercial applications of regression and time-series analysis
- Linear relationships: slope, y-intercept, variable interactions
- Variance and standard deviation
- Covariance and correlation
- Normal distribution and bell curves

### Evaluating Your Model

- Distribution of errors: Q-Q plot, heteroscedasticity
- Multivariate regression
- R- and adjusted R-
- p-values and the t-test
- F-test and F-distribution

### Identifying the Most Important Variables

- Multicollinearity test
- Heteroscedasticity test
- Model selection: Akaike Information Criterion
- Polynomial regression
- Confidence intervals

### Time-Series Analysis Seasonality

- Moving averages
- Seasonality detection: auto-correlation
- Seasonality: additive vs. multiplicative
- Decomposing seasonal data: trend, level and seasonality
- Multiplicative Holt-Winters exponential smoothing
- Forecasting seasonal trends
- Local regrESSion: LOESS



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## Regression and Time-Series Analysis Training FAQs

### Who should take this course?

This course is intended for professionals who have a good working knowledge of R, work with time-series data and want to create forecasts for future trends, need to model cyclical or seasonal data such as sales, customer volumes, web traffic, employee behaviors, etc.;

need a good background in basic statistics and statistical modeling

or want to stand out as data scientists with advanced predictive modeling and time-series analysis skills .

### What is the recommended experience for this course?

Students should have taken the Introduction to Data Science, R, and Visualization course or should have the equivalent knowledge of data manipulation, cleaning and visualization.

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Starting at **\$1,500**



### Price Match Guarantee

We'll match any competitor's price quote. Call us at 240-667-7757.



## Included in this **Supervised Machine Learning: Regression and Time-Series Analysis Training**

- 4 days instructor-led training
- Supervised Machine Learning: Regression and Time-Series Analysis Training training book
- Take-home code templates
- Course reference guides and cheat sheets for additional support at home
- Case studies and interactive practice scenarios to help develop problem-solving skills
- Notepad, pen and highlighter
- Variety of bagels, fruits, doughnuts and cereal available at the start of class\*
- Tea, coffee and soda available throughout the day\*
- Freshly baked cookies every afternoon\*