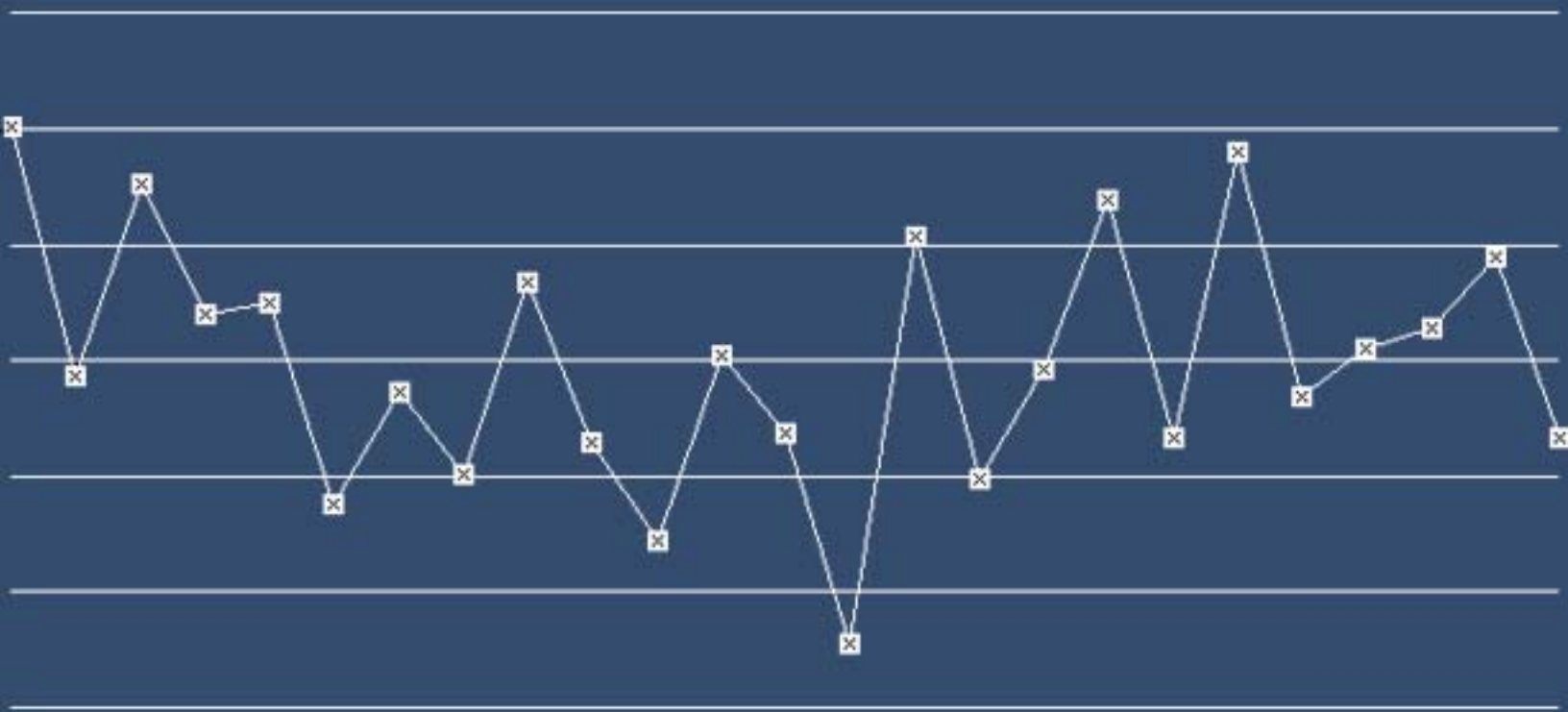




# EXCEL APPLICATIONS CURRICULUM



## Excel Applications Curriculum

VR Data Systems offers our Excel Applications Curriculum to any individual seeking education and training in basic and advanced statistical concepts using Microsoft Excel. Courses in this curriculum will provide an understanding of graphical data analysis, experimentation, hypothesis testing, and business statistics. Students will learn using practical applications, and are welcome and encouraged to use challenges from their own profession as learning tools during class discussions and projects.

Courses in our Excel Applications Curriculum are perfect for individuals that need to perform data analysis but have limited technical expertise or do not need the power, complexity or cost associated with sophisticated assessment tools. Each course in this curriculum reviews critical topics and techniques but makes it easy for anyone to understand and perform in Excel. In fact, VRDS shows students that data analysis does not have to be complicated or scary.

### Courses

| Code    | Course Title                                  | Length |
|---------|---|--------|
| EAC-750 | Introduction to Statistics using Excel        | 2 Days |
| EAC-755 | Data Analysis using Excel                     | 2 Days |
| EAC-760 | Statistical Process Control (SPC) using Excel | 3 Days |
| EAC-765 | Statistical Inference using Excel             | 3 Days |
| EAC-770 | Business Analysis using Excel                 | 3 Days |

### Customized Courses

VR Data Systems will customize any course(s) to suit the unique business requirements of our clients. From the modification of standard curriculum to new course development, we will provide the education and training your organization needs to be more productive in today's competitive environment. Ask a VR Data Systems representative for more information.

### About VR Data Systems, Inc.

VR Data Systems, Inc. (VRDS) is a training and consulting firm that specializes in Quality, Statistics, and Data Analysis. For more than 15 years, we have offered comprehensive, hands-on curricula for professionals at any experience level in numerous industries, including Pharmaceutical, Clinical, Manufacturing, Financial, and Software & Hardware Development. Our courses are taught by seasoned instructors who possess long-term expertise in their respective fields – from Sales and Marketing to Finance and R&D.

# Excel Applications Curriculum

## EAC-750 Introduction to Statistics using Excel

**Length:** 2 days

### Course Goal

Upon completion of this course, the student will be able to understand fundamental statistical concepts and terminology, as well as know how to use Excel to perform basic data analysis.

### Course Description

This course is ideal for any student who has no prior knowledge of statistics or data analysis. Using MS Excel, an integral part of this course, students will learn how to make sense of raw data, including patterns of dispersions, simple graphical analysis and relationships between two sets of data.

### Broad Topics

- Using MS Excel as a tool for data analysis
- Organizing and analyzing data using MS Excel
- Qualitative and quantitative data
- Measures of location and dispersion
- Using MS Excel to create and interpret basic charts
- Summary statistics
- Normal distributions and applications
- Simple linear regression

### Target Audience

Any technical or non-technical individual who has no experience in statistics or data analysis and would like to learn how to analyze data using MS Excel.

### Prerequisites

ECC-700 (Introduction to MS Excel) or equivalent knowledge.

“Statistical thinking will one day be as necessary a qualification for efficient citizenship as the ability to read and write.”

--H.G. Wells

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<http://www.vrds.com>

# Excel Applications Curriculum

## EAC-755 Graphical Data Analysis using Excel

*Length: 2 days*

### Course Goal

Upon completion of this course, the student will understand how to analyze data graphically by using MS Excel.

### Course Description

Since the emphasis of this course is placed on how to look at data as graphics rather than summary statistics, students will learn that well-designed data graphics are usually the simplest and most powerful methodology to analyze, explore, describe, summarize and communicate different types statistical information.

### Broad Topics

- Using Excel as a tool for data analysis
- Elements of graphing data
- Portraying the distribution of a single set of data
- Comparing two sets of empirical distributions
- Comparing empirical data to theoretical distributions
- Studying two-dimensional data
- Developing and assessing regression models
- Plotting multivariate data

### Target Audience

Any individual who would like to learn how to analyze patterns and/or trends within data. This course teaches powerful data analysis concepts but is presented in a manner that is easy enough for anyone to follow and complete successfully.

### Prerequisites

ECC-700 (Introduction to MS Excel) or equivalent knowledge.

“The objective of statistical analysis is to discover what conclusions can be drawn from data and to present these conclusions in as simple and lucid a form as is consistent with accuracy.”

-- D. R. Cox and  
E. J. Snell

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## Excel Applications Curriculum

### EAC-760 Statistical Process Control (SPC) using Excel

*Length: 3 days*

#### Course Goal

Upon completion of this course, the student will know how to measure, control, improve and monitor the processes within his or her organization using MS Excel.

#### Course Description

This course will help students understand the objectives and benefits of SPC, including construction and interpretation of control charts, distinguishing between common and special causes, and process capability assessment. This course will deal with real-world business scenarios and incorporate the student's own processes and data, if available. During the course, the student will learn how to use Excel and a value-add package, QI Tools, to create charts. Each student will receive a free copy and one user license of the QI Tools package – a \$130 value.

**This course is an absolute must for Six Sigma Black Belt Certification through the American Society for Quality (ASQ).**

#### Broad Topics

- Using Excel as a tool for data analysis
- Using QI Tools
- Control charts for individuals, attributes and variables
- Seven tools for SPC
- Zone tests and analysis of patterns
- Process capability studies (design and conduct)
- Non-normal data transformations
- Continuous Improvement Process
- Application of SPC for Six Sigma

#### Target Audience

This course is for beginners and is highly recommended for individuals whose professions require evaluation, implementation and refinement of processes. The course focuses on assuring quality within an organization.

#### Prerequisites

ECC-700 (Introduction to MS Excel) or equivalent knowledge and either BDC-105 (Introduction to Statistics) or BDC-110 (Introduction to Statistics and Probability) or equivalent knowledge.

"The major difference between a thing that might go wrong and a thing that cannot possibly go wrong is that when a thing that cannot possibly go wrong goes wrong it usually turns out to be impossible to get at or repair."

-- Douglas Noel Adams

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# Excel Applications Curriculum

## EAC-765 Statistical Inference using Excel

**Length:** 3 days

### Course Goal

Upon completion of this course, the student will understand how to generate samples and draw valid conclusions by applying rigorous statistical analysis methods to find and/or confirm research questions. These questions are then transformed into statistical hypotheses that can be tested using probability theory.

### Course Description

In this course, students will learn the concepts of setting up several types of statistical tests to verify a hypothesis for population parameters based on sample statistics. Students will also be taught how to use Excel to perform calculations. Group projects, based on the students' actual business requirements, will be used as tools to allow participants to combine all of the steps they have learned in order to set up experiments and draw conclusions from their data.

### Broad Topics

- Using Excel as a tool for data analysis
- Descriptive statistics
- Concepts in probability
- Discrete and continuous probability distributions
- Sampling distributions
- Confidence intervals
- Hypothesis testing
- Inferences on population mean, proportion and variance
- Linear regression

### Target Audience

Any technical individual who would like to learn how to analyze patterns and/or trends within data.

### Prerequisites

ECC-700 (Introduction to MS Excel) or equivalent knowledge and BDC-105 (Introduction to Statistics) or equivalent knowledge.

"Years ago a statistician might have claimed that statistics deals with the processing of data. . . today's statistician will be more likely to say that statistics is concerned with decision making in the face of uncertainty."

-- H. Chernoff and  
L. E. Moses

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# Excel Applications Curriculum

## EAC-770 Business Analysis using Excel

**Length:** 3 days

### Course Goal

Today's professional needs to understand Excel can be a business tool, not just a spreadsheet. Upon completion of this course, the student will be able to accomplish common business objectives with ease by leveraging Excel as a powerful analysis and planning device for his or her workplace.

### Course Description

In this course, students learn how to use Excel in a business environment. Emphasis is placed on powerful functionality that will empower users to perform statistical and financial analyses, build models as schedules and forecast revenue.

### Broad Topics

- Using Excel as a tool for data analysis
- Charting in Excel
- Statistical analysis
- Financial calculations
- Business modeling
- Pivot tables and charts
- Business financial manager
- Profit volume and break-even analysis
- Forecasting sales and cost of sales
- Capital budgeting
- Amortization schedules
- Asset depreciation schedules

### Target Audience

Any individual who would like to learn how to use powerful tools built into Excel to perform his or her job more efficiently. This course is ideal for individuals in management, finance, marketing, sales, human resources and administration.

### Prerequisites

ECC-700 (Introduction to MS Excel) or equivalent knowledge.

With many calculations,  
one can win; with few  
one cannot. How much  
less chance of victory  
has one who makes  
none at all!

--Sun Tzu  
The Art of War

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