



SIX SIGMA
CONCEPTS
CURRICULUM

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Six Sigma Concepts Curriculum

VR Data Systems offers our Six Sigma Concepts Curriculum to any individual with no background in Six Sigma and DFSS or for those who simply need a refresher. Our courses provide an understanding of concepts, methods and tools as they apply to Six Sigma, DFSS and related projects. Students will learn through case studies and practical applications, and are welcome and encouraged to use challenges from their own profession as learning tools during class discussions and projects.

All courses in our Six Sigma Statistics Curriculum address topics required for the Certified Six Sigma Black Belt (CSSBB) certification by the American Society for Quality (ASQ) and other certification bodies.

Courses

| Code | Course Title | Length |
|---------|----------------------------------|--------|
| SXC-600 | Defining your Six Sigma Projects | 1 Days |
| SXC-605 | Process Analysis and Improvement | 2 Days |
| SXC-610 | Concepts and Methods for DFSS | 2 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.

In addition, VRDS will work within your busy schedule to accommodate your time frames and deadlines. For example, we can split up any multiple-day course into individual one-day sessions that can be held on any weekday and/or weekend, or even conduct half-day sessions during morning, afternoon or evening hours.

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.

Six Sigma Concepts Curriculum

SXC-600: Defining your Six Sigma Projects

Length: 1 day

Tuition:

Course Goal

Upon completion of this course, the student will understand tools and techniques that are essential in identifying Six Sigma projects. This course teaches concepts that may be applied directly in the “Define” phase of the DMAIC process.

Course Description

This course teaches students essential methods for finding, defining and prioritizing improvement goals. Through the use of tools such as Pareto diagrams and CTQ trees, students learn to evaluate project goals, assess scope, and enumerate tangible internal and customer deliverables. Group projects, based on the students’ actual business, will be used as tools to allow participants to combine all of the steps they have learned.

Broad Topics

- What is Six Sigma
- Project scope
- Metrics selection
- Identifying customer needs
- Problem statements
- Project charter
- Goal statement
- Stakeholder analysis
- Defining the customer
- Pareto diagrams
- Suppliers, Inputs, Process, Outputs, Customers (SIPOC)
- Rolled Throughput Yield (RTY)
- Voice of the Customer (VOC)
- Critical to Quality (CTQ) tree
- Case studies

Target Audience

This course is ideal for executives, managers, project leaders or quality leaders who are championing Six Sigma initiatives in their organization, or for any individual seeking Six Sigma Black Belt Certification by the American Society for Quality (ASQ) or most other certifying bodies.

Prerequisites

None.

“Everything that has a beginning has an ending. Make your peace with that and all will be well.”

-- Buddha

Contact VRDS

Call
(732) 219-5935

Email
info@vrds.com

Fax
(888) 291-6501

Visit
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Six Sigma Concepts Curriculum

SXC-605: Process Analysis and Improvement

Length: 2 days

Course Goal

Upon completion of this course, students will know how to establish legitimate and consistent metrics to reach goals defined for Six Sigma projects. This course teaches concepts that may be applied directly in the "Measure" phase of the DMAIC process.

Course Description

In this course, students learn how to make better business decisions based on the use of a variety of information collection and compilation tools that are critical for the efficient creation of various company strategies. Examples of the course's quality tools include run charts, control charts, probability plots, check sheets, fishbone diagrams and Pareto charts. Quality management tools in use include affinity diagrams, interrelationship digraphs (ID), tree diagrams, matrix diagrams, prioritization matrices, process decision program charts, activity network diagrams and scatter plots. Group projects, based on the students' actual business, will be used as tools to allow participants to combine all of the steps they have learned.

Broad Topics

- Flowcharts
- Brainstorming
- Defining a process
- Key process inputs/outputs
- Descriptive statistics
- Benchmarking
- Force field analysis
- Basic quality tools
- Quality management tools
- Cause-and-effect diagrams

Target Audience

This course is ideal for executives, managers, project leaders or quality leaders who are championing Six Sigma initiatives in their organization, or any individual seeking Six Sigma Black Belt Certification by the American Society for Quality (ASQ) or most other certifying bodies.

Prerequisites

None.

"It is a capital mistake to theorize before one has data."

-- Sir Arthur Conan Doyle

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Six Sigma Concepts Curriculum

SXC-610: Concepts and Methods for DFSS

Length: 2 days

Course Goal

Upon completion of this course, students will understand the DFSS methodology as well as tools and their appropriate uses to ensure successful DFSS implementation.

Course Description

This course helps students analyze a completed QFD matrix, as well as understand the terminology, purpose and use of scale criteria (RPN), and be able to apply this knowledge to a process, product or service. In doing so, students are able to deal with different types of FMEAs, including design, process, system and functional, as well as understand design constraints such as cost, manufacturability, producibility, testing and maintainability. Participants also gain an understanding of the concept of special design tools such as the theory of inventive problem-solving (TRIZ) and axiomatic design.

Broad Topics

- Introduction to DFSS
- Benchmarking
- Quality Function Deployment (QFD)
 - QFD definition
 - Cause and effect matrix
 - Data relationship matrix
 - House of quality
 - QFD, cost control and productivity improvement
- Voice of the Customer (VOC)
- Failure Mode and Effects Analysis (FMEA)
 - FMEA definition
 - Need for FMEA
 - FMEA teams
 - Types of FMEA
- Pugh Concept Selection Technique
- Poka-Yoke
- Design for X (DFX)
- Theory of invention problem (TRIZ)
- Special design tools
- Introduction to Design of Experiments
- Introduction to Robust Design

Target Audience

This course is ideal for executives, managers, project leaders or quality leaders who are championing Six Sigma initiatives in their organization, or any individual seeking Six Sigma Black Belt Certification by the American Society for Quality (ASQ) or most other certifying bodies.

Prerequisites

None.

“A common mistake that people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools.”

-- Douglas Adams

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