



## VET337-SIX SIGMA GREEN BELT FUNDAMENTALS

### MODULE DESCRIPTION:

This module introduces students to Six Sigma and provides the basic knowledge to utilize the Six Sigma methods. Six Sigma was originally developed by Motorola in the mid-1980s as a way to help manufacturers reduce defects. Since then it has expanded to a many sectors and is best known as a business management strategy that seeks to improve the quality of process outputs.

Six Sigma certifications include yellow belt, green belt, black belt and masters. Certification at each level can vary. In general, this course provides the fundamental knowledge needed to satisfy the yellow belt. The course meets the learning objectives as defined in Syracuse University's **Six Sigma: Green Belt Book of Knowledge**, but does not provide hands-on experience or evaluation that may be required to be qualified as a **Six Sigma** Green Belt professional by certifying bodies or organizations.

Prerequisite Course: None

Upon completion of VET337 students should be able to:

- **Describe** Six Sigma.
- **Describe** Lean.
- **Identify** organizational drivers and metrics.
- **Describe** project selection and organizational goals.
- **Identify** and **Describe** the 5 phases (DMAIC Methodology) of the Six Sigma Process.
- **Utilize** several process documentation tools.
- **Understand** basic probability concepts and statistical tools.
- **Understand** basic project management fundamentals.
- **Identify** the essentials of Six Sigma Implementation.
- **Design** experiments to validate Six Sigma solutions.

## MODULE CONTENT (SUGGESTED ORDER):

<b>Topic 1: Six Sigma Green Belt: Six Sigma and the Organization</b>		<b>Assessment Required?</b>
1.1	<b>SS Course:</b> Six Sigma and Organizational Goals <b>(2.0 hrs)</b>	√
1.2	<b>SS Course:</b> Lean Principles and Six Sigma Projects <b>(2.5 hrs)</b>	√
1.3	<b>SS Course:</b> Design for Six Sigma and FMEA <b>(1.5 hrs)</b>	√
<b>Topic 2: Six Sigma Green Belt: Define</b>		<b>Assessment Required?</b>
2.1	<b>SS Course:</b> Six Sigma Project Identification <b>(1.5 hrs)</b>	√
2.2	<b>SS Course:</b> Voice of the Customer in Six Sigma <b>(2.0 hrs)</b>	√
2.3	<b>SS Course:</b> Basics of Six Sigma Project Management <b>(2.0 hrs)</b>	√
2.4	<b>SS Course:</b> Six Sigma Management and Planning Tools <b>(1.5 hrs)</b>	√
2.5	<b>SS Course:</b> Performance Metrics for Six Sigma <b>(1.5 hrs)</b>	√
2.6	<b>SS Course:</b> Six Sigma Team Dynamics and Performance <b>(1.5 hrs)</b>	√
<b>Topic 3: Six Sigma Green Belt: Measure</b>		<b>Assessment Required?</b>
3.1	<b>SS Course:</b> Process Documentation and Analysis in Six Sigma <b>(1.0 hrs)</b>	√
3.2	<b>SS Course:</b> Basic Probability and Statistical Distribution in Six Sigma <b>(1.5 hrs)</b>	√
3.3	<b>SS Course:</b> Data Classification, Sampling, and Collection in Six Sigma <b>(1.5 hrs)</b>	√
3.4	<b>SS Course:</b> Statistics and Graphical Presentation in Six Sigma <b>(1.0 hrs)</b>	√
3.5	<b>SS Course:</b> Measurement System Analysis in Six Sigma <b>(1.5 hrs)</b>	√
3.6	<b>SS Course:</b> Process and Performance Capability Measurement in Six Sigma <b>(1.5 hrs)</b>	√
<b>Topic 4: Six Sigma Green Belt: Analyze</b>		<b>Assessment Required?</b>
4.1	<b>SS Course:</b> Multi-vari Studies, Correlation, and Linear Regression in Six Sigma <b>(1.5 hrs)</b>	√
4.2	<b>SS Course:</b> Introduction to Hypothesis Testing and Tests for Means in Six Sigma <b>(1.5 hrs)</b>	√
4.3	<b>SS Course:</b> Hypothesis Tests for Variances and Proportions in Six Sigma <b>(1.0 hrs)</b>	√
<b>Topic 5: Six Sigma Green Belt: Improve</b>		<b>Assessment Required?</b>

5.1	<b>SS Course:</b> Design of Experiments in Six Sigma <b>(1.5 hrs)</b>	√
5.2	<b>SS Course:</b> Root Cause Analysis and Waste Elimination in Six Sigma <b>(1.5 hrs)</b>	√
5.3	<b>SS Course:</b> Cycle Time Reduction and Kaizen in Six Sigma <b>(1.0 hrs)</b>	√

<b>Topic 6: Six Sigma Green Belt: Control</b>	<b>Assessment Required?</b>
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6.1	<b>SS Course:</b> Statistical Process Control and Control Plans in Six Sigma <b>(1.5 hrs)</b>	√
6.2	<b>SS Course:</b> Creating and Using Control Charts in Six Sigma <b>(2.0 hrs)</b>	√
6.3	<b>SS Course:</b> Lean Tools for Process Control in Six Sigma <b>(1.0 hrs)</b>	√

### SUCCESSFUL MODULE COMPLETION REQUIREMENTS:

1. Full completion of each of the above topics and a minimum assessment grade of 80% where an assessment is designated as required.

OR

SS Course Assessment of 100%

*Note: The advisor has the discretion to adjust requirements as needed on an individual student basis.*

### INDUSTRY CERTIFICATION REQUIREMENTS

- **Prerequisite Industry Certification:**
  - None
- **Work and Education Requirements (minimum):**
  - Three years of work experience in one or more areas of the Six Sigma Green Belt Body of Knowledge (recommended)