

## **SOUTHERN ILLINOIS UNIVERSITY**

### **IT 470A Six Sigma Green Belt Fall 2009 – Travis AFB**

#### **Instructor:**

Robert O. O'Dea

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#### **Instructor Availability:**

Your instructor is available for conference and/or assistance immediately before, during and after scheduled class periods or at a mutually agreed upon time and place.

#### **Course Description:**

This course introduces the fundamentals of Six Sigma as applicable to development of a Green Belt. The course includes a discussion of the history or roots of Six Sigma, disciplines of Six Sigma including Lean Principals, Theory of Constraints, Design For Six Sigma (DFSS), Failure Mode and Effects Analysis (FMEA), Business Processes, Teams and Roles, Communication, Conflict Resolution, Project Management and Risk Analysis, Quality Cost Measures, Metrics and other defined principles of the subject.

#### **Course Objectives:**

1. To acquaint the student with Six Sigma.
2. To provide the student with a sound understanding of Six Sigma Green Belt terminology and the application of these Six Sigma principles.

#### **Required Texts:**

CSSGB PRIMER (The Six Sigma Green Belt Primer), Quality Council of Indiana, [www.qualitycouncil.com](http://www.qualitycouncil.com), 2006

#### **Evaluation:**

Grading: Letter grades will be based on the following:

Attendance  
3 Tests

## Team/Class Participation and Homework

90 – 100%	= A
80 – 90%	= B
70 – 80%	= C
60 – 70%	= D
Less than 60%	= F

The course grade will be based on attendance, three tests, class participation – including team activities and homework. Each of the three tests will be multiple choice and true/false. The terms test will be matching. Students will not be allowed to take the exams other than at the scheduled times without prior approval of the Instructor. The instructor reserves the right to impose a 10% penalty for tests or work not completed on time.

Attendance	30 points (5 points per day)
Test 1	40 points (first Sunday, August 30)
Test 2	40 points (second Sunday, September 13)
Test 3	40 points (third Sunday, September 27)
Class Participation	30 points
<u>Homework</u>	<u>30 points</u>

**210 points total**

### **Teaching Methods:**

The instructor will use informal lectures, group discussions, team exercises and application of Six Sigma principles.

### **Class Policy:**

Attendance – Students are expected to attend all scheduled classes. Students who are absent or late are responsible for arranging to make up for missed materials. The instructor realizes that military duty sometimes interferes with class schedules and will not impose a penalty for late work if documentation is presented showing military duty as a reason for the lateness.

Assigned class readings are required prior to attending class. Lectures will supplement, but not replace, assigned readings.

## **Topic Schedule**

The following is a study/work sequence, tracking the text, that the instructor plans to follow. Actual coverage per weekend may vary, but the student should be prepared ahead of time based on this schedule.

### **First Weekend (August 29<sup>th</sup> and 30<sup>th</sup>, 2009)**

Reading:

CSSGB PRIMER – Sections 1, 2 and 3

Section 1: Certification Overview

Section 2: Six Sigma Goals

Section 3: Lean and Design for Six Sigma (DFSS)

Concepts and Studies:

Six Sigma Goals

Values of Six Sigma

Origins of Six Sigma

Organizational Drivers

Goals and Projects

Test 1

Concepts and Studies:

Lean Principals and Lean Concepts

Lean Principles and Non-Value Added Activities

Theory of Constraints

DFSS – DFFS Roadmaps

DFSS – Quality Function Deployment (QFD) in Design

DFSS – Failure Mode and Effects Analysis (FMEA) Varieties

Homework Assignment

### **Second Weekend (September 12<sup>th</sup> and 13<sup>th</sup>, 2009)**

Reading:

CSSGB PRIMER – Section 4 and 5

Section 4: Define: Teams & Customers

Section 5: Define: Projects, Tools & Results

Concepts and Studies:

Process Management – Process Elements

Process Management – Owners and Stakeholders

Process Management – Identifying Customers

Process Management – Collecting Customer Data

Process Management – Analyzing Customer Data  
Process Management – Translating Customer Requirements  
Team Performance – Team Stages and Dynamics  
Team Performance – Roles  
Team Performance – Team Tools  
Team Performance – Communications

## Test 2

### Concepts and Studies:

Project Management – Project Charter  
Project Management – Project Scope  
Project Management – Project Metrics  
Project Management – Project Planning Tools  
Project Management – Project Documentation  
Project Management – Project Risk Analysis  
Management and Planning Tools  
Business Results – Process Performance  
Business Results – Failure Mode and Effects Analysis (FMEA)

## Homework assignment

### **Third Weekend (September 26<sup>th</sup> and 27<sup>th</sup>, 2009)**

### Reading:

#### CSSGB PRIMER - Section 6

Section 6: Measure – Data & Process Analysis

### Concepts and Studies:

Process Analysis – Process Modeling  
Process Analysis – Process Inputs and Outputs  
Collecting Data – Types of Data  
Collecting Data – Collection Methods  
Collecting Data – Accuracy and Integrity  
Collecting Data – Descriptive Statistics  
Collecting Data – Graphical Methods

## Test 3