

Tech 230-01, Six-Sigma and Continuous Improvement Systems Management, Spring 2014

Contact Information

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Office Hours:	After Class or by appointment only
Class Days/Time:	Tuesday 6:00 PM-8:45 PM (1/23-5/13)
Classroom:	Industrial Studies 120
Prerequisites:	STAT 115 or equivalent

Course Description

Six-Sigma quality systems for design production and business processes. Statistical foundations, implementation strategies, and practical industrial applications. Methods and practices of achieving continuous quality improvement, defect reduction, project planning and management methods to achieve universal participation in process improvement.

Course Goals and Learning Objectives

This course reviews Six Sigma System and its impact on quality systems and continuous improvement for design, production and business processes. Tools, implementation strategies, and practical industrial applications will be discussed. The role of 6σ as a quality goal and its measurement will be compared to other indices, such as process capability, defects per million (DPM), and defects per million opportunities (DPMO).

At the end of this course, the student should be able to:

- Explain the need for 6σ quality;
- Understand and apply the DMAIC methodology for breakthrough and incremental improvements;
- Understand the need for addressing organizational change in conjunction with 6σ ;
- Create an improvement plan that promotes a sense of urgency and direction for

- the organization;
- Select from the appropriate improvement tools to become better problem solvers;
- Understand the practical benefits and limitations of applied statistical methods.

Required Texts/Readings

Textbook (References)

1. Stefano and Eva Lo Franco, **Statistical and Managerial Techniques for Six Sigma Methodology**, Wiley.
2. Benbow, D. M., & Kubiak, T. M. (2005). **The Certified Six Sigma Black Belt Handbook**, Milwaukee, WI: ASC Press.
3. Pande, P. S., Neuman, R. P., & Cavanagh, R. R. (2000). *The Six Sigma way: How GE, Motorola, and other top companies are honing their performance*. New York: McGraw-Hill.
4. Pyzdek, T. (2003). *The Six Sigma handbook: The complete guide for greenbelts, blackbelts, and managers at all levels*. New York: McGraw-Hill.

Other Readings

A book list will be given in the reading project.

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. **More details about student workload can be found in [University Policy S12-3](http://www.sjsu.edu/senate/docs/S12-3.pdf) at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.**

Grading Policy

Final Exam (20%); Reading Project and Presentation: Essay and Critics (30%); Team DAMIC Project and Presentation: (40%), Response Papers (10%)

Grading A+ (100); A (93-99); A- (90-92); B+ (88-89); B (83-87); B- (80-82); C+ (78-79); C (73-77); C-(70-72); D+ (65-68); F (below 65)

University Policies

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the

current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic_calendars/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course.

- “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
 - It is suggested that the greensheet include the instructor's process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
 - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at <http://www.sjsu.edu/senate/docs/S07-2.pdf> requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center \(AEC\)](http://www.sjsu.edu/aec) at <http://www.sjsu.edu/aec> to establish a record of their disability.

In 2013, the Disability Resource Center changed its name to be known as the Accessible Education Center, to incorporate a philosophy of accessible education for students with disabilities. The new name change reflects the broad scope of attention and support to SJSU students with disabilities and the University's continued advocacy and commitment to increasing accessibility and inclusivity on campus.

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Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/28/2014	What is Six Sigma and Why?
2	2/4/2014	Basic Statistical Techniques
3	2/11/2014	Basic Managerial Techniques
4	2/18/2014	team project (Define)
5	2/25/2014	Advanced Statistical Techniques
6	3/4/2014	Advanced Managerial Techniques
7	3/11/2014	Case Studies
8	3/18/2014	Case Studies
9	3/25/2014	No Class Spring Break
10	4/1/2014	team project (Measure/Analyze)
11	4/8/2014	Report on Selected Book Reading
12	4/15/2014	Report on Selected Book Reading
13	4/22/2014	team project (Improve/Control)
14	4/29/2014	team project presentation
15	5/6/2014	team project presentation
16	5/13/2014	Value Stream, Lean, DFSS
Final Exam	5/20/2014	

Schedule is subject to change with fair notice and by e-mail.