**Cal Poly**

**Lean Six Sigma Green Belt (ITP303) and Transactional Green Belt Courses with In-class and Online Options**

Class Meetings: Wednesday 5-7PM online at Zoom [https://calpoly.zoom.us/j/215381714](https://calpoly.zoom.us/j/215381714" \t "_blank)

Dr. Eric Olsen Professor of Industrial and Packaging Technology

Online Office Hours: TBD

Office: 805 756-1754 Course Web Address: Cal Poly Students - PolyLearn

Non-Cal Poly Students (e.g. Transactional GB and BB) – Cal State Fullerton Moodle

Email: [eolsen@calpoly.edu](mailto:eolsen@calpoly.edu) Website: <http://www.cob.calpoly.edu/faculty/eric-olsen/>

*Central Coast Lean:* ***[www.cob.calpoly.edu/centralcoastlean/](http://www.cob.calpoly.edu/centralcoastlean/" \t "_blank)***

TA for this class is Bennett Antes: [bwantes@calpoly.edu](mailto:bwantes@calpoly.edu)

**IT303 COURSE DESCRIPTION**

4 units

Prerequisite: STAT 217, STAT 218, STAT 251, or any 300 or 400 level statistics course.

Development of a comprehensive set of skills to effectively function as a lean six sigma leader. Discussion and problem workout sessions covering the lean six sigma green belt body of knowledge including problem definition, measurement, analysis, improvement, and control, as well as the team leadership skills necessary to complete projects. In class or 100% Online.

**Teaching and Online Learning Approach**

We will use a “flipped classroom” approach that emphasizes questions and answers and real world guests in the classroom and access to knowledge content and theory online. We call the class the “Cal Poly Lean Six Sigma Forum” because it combines three categories of students: Green Belts (GBs), Transactional Green Belts (TGBs), and Black Belts (BBs). And just about anyone from the lean six sigma community who wants to join us online. Students can be in a CSU degree program or working professionals. This creates a rich mix of experience and lean learners.

The class meets synchronously in-class and online every week using Zoom <http://calpoly.zoom.us/> . Students are required to attend every session to ask questions and interact either in person or online. Guest speakers will be a regular feature of the second weekly session and will be the most interactive. The first weekly session will be a “Movie Day” featuring the greatest hits of lean online movies and videos. Attendance to the Movie Day session is optional, but we will be discussing the movie afterwards. Physical seating in the class is “open” to both in-class and online students with priority going to in-class students. Although this approach has yielded plenty of available seats in the past, we are still experimenting. You can always participate online if you are in either section.

Students will be required to complete a “Lecture Quiz” for each session. The primary learning elements for the course are the online lectures and guest speakers, weekly online movies, the online MoreSteam training material (see below), and an individual Lean Six Sigma Mini Project.

***Comment on Transactional vs “Regular” Green Belt:*** The Transactional Green Belt course of study is offered to CSU, UC, and Community College faculty and staff that are tasked with applying lean six sigma in an administrative work environment. Topics, examples, and tools covered in the online MoreSteam sessions are tailored for such. Regular Green Belts pursue a more general course of study that includes traditional topics, examples, and tools applicable to industrial operations and manufacturing. However, all GBs cover the same DMAIC (Define, Measure, Analyze, Improve, Control) process and its underlying lean principles.

**LEARNING GOALS AND OUTCOMES**

The overarching learning objective of this course is to develop a comprehensive set of skills that will allow you to function effectively as a Lean Six Sigma leader. The Green Belt body of knowledge includes techniques for both quantitative and non-quantitative analysis, as well as the team leadership skills necessary to get projects across the goal line. *[Note: This* ***course is about training, NOT certification****. An additional course, which includes a significant project, is required for certification.]*

After completing this course, you should be able to DO the following:

1. Communicate using Lean Six Sigma concepts.
2. Think about your organization as a collection of processes, with inputs that determine the output.
3. Relate Lean Six Sigma concepts to the overall business mission and objectives.
4. Use the concept of a Sigma Level to evaluate the capability of a process or organization.
5. Understand and apply the five step D-M-A-I-C model as a framework to organize process improvement activity.
6. Employ a wide range of process improvement techniques within the D-M-A-I-C model.
7. Recognize the organizational factors that are necessary groundwork for a successful Lean Six Sigma effort.
8. Employ your Six Sigma skills to lead a successful process improvement project delivering meaningful results to the organization.

*Testimonial from past Student: “… I want to thank you for what has turned out to be an excellent class. Since learning the principles of lean six sigma and applying them to my project I have begun to view mundane everyday tasks as a process/system, which, with the use of the appropriate tools, may become increasingly more efficient and effective in achieving their intended goal. Moreover, the means by which you taught us these principles - e.g. the flipped classroom experience - really helped me to understand how what I was learning in the modules applied to the jobs of those people who came into speak. Although this autonomous system of learning did initially backfire on me as I struggled to keep up with MoreSteam’s demanding study schedule, it did, in the end, prove to be the most effective way for me to learn the material, which I hope is evident from my score on the final.  
  
In short, thank you for offering this class and for doing so in a fun and interactive way. I am graduating this coming Saturday (assuming I pass all my finals ha ha), however, I hope to stay in touch. Who knows, maybe someday I will go on to do great things with the knowledge I took from your class and can come in to share that with your new crop of students.”*

- ***David Berning, Pilot Class Fall 2013***

**Related – ITP Program Learning Goals**

1. Apply fundamental knowledge and skills to solve management, technology and applied engineering problems.
2. Apply  decision tools and methods and make recommendations based on their outcome.
3. Demonstrate effective participation and leadership in teams.
4. Demonstrate effective writing and speaking skills.

**COURSE MATERIALS**

**Required**

1. This course does not have a text.  We will be using the same online training material used by over 50% of Fortune 500 Companies.  MoreSteam is a premiere supplier of online lean six sigma training material [https://www.moresteam.com/elearning/tour/lean-six-sigma-retail-tour.cfm](https://www.moresteam.com/elearning/tour/lean-six-sigma-retail-tour.cfm" \t "_blank)  You need to purchase access for a year.

Follow these steps:

* 1. Obtain a discount**Coupon Code**from Professor Eric Olsen  [eolsen@calpoly.edu](mailto:eolsen@calpoly.edu" \t "_blank) or on the course website.  This will allow you to **pay the Cal Poly discount price and get the correct mix of products** (i.e. training, practice test, and final exam).
  2. Go to the Cal Poly/MoreSteam portal at: [**https://www.moresteam.com/university/calpoly.cfm**](https://www.moresteam.com/university/calpoly.cfm) Select **ENROLL** **Cal Poly Lean Six Sigma Green Belt and Exam and Zombie Hunter** (Cal Poly students or non-CSU professionals) **or Transactional Green Belt and Exam**. Note that you are receiving a significant discount from the list price.  ***DO NOT go to the main site for MoreSteam. Your discount will not work.***
  3. **CREATE MY ACCOUNT** for new customers.  The price will be adjusted based on your Coupon Code at checkout.  Be sure to **use your Cal Poly (students) or work email address** as your username to get the discount.
  4. **Enter Coupon Code** and **Pay** as directed.

1. In line with its mission to "Build a Community of Lean Practice" Central Coast Lean has purchased a site license to Gemba Academy [**http://www.gembaacademy.com/enterprise/CCLean/**](http://www.gembaacademy.com/enterprise/CCLean/) . This license allows any Cal Poly student, faculty, or staff **free** access the site and its resources. The **username is: CCLean** and the **password is: CRY8muda** (case sensitive). The password will change every quarter. If you are still at Cal Poly in the future and want access to the site, just contact me eolsen@calpoly.edu. Please respect this as intellectual property and do not share this outside Cal Poly. If you do want to share this within Cal Poly, I would appreciate if you cc me or send folks to me for access. That way I can monitor the "community building."
2. To participate in this course online, you are required to have access to a good internet connection and a working computer with a good microphone and video cam. We will be required to demonstrate you compliance to this requirement by make a brief online “stand-up” presentation to the class.

**Recommended**

It is also recommended you get a free copy of Minitab from Cal Poly or your University’s software download channel. This will supplement the statistics software (EngineRoom) provided free with the MoreSteam training. Minitab also has a “lite” version that runs on a Mac.

**COURSE REQUIREMENTS**

To successfully achieve the learning objectives for this course, you are required to:

1. Complete quizs and assignments for each topic per the course block plan provided.
2. Prepare to discuss and ask questions about material covered in online sessions.
3. Attend weekly class sessions (in class or online) designed to enhance your understanding and appreciation of the course material and take appropriate quizzes.
4. Complete various “participation” assignments designed to engage you in the course and the lean six sigma community.
5. Complete the Practice Test.
6. Complete a “Lean Six Sigma Mini-Project” (see below).
7. Pass a comprehensive online exam during finals week – 60 questions, 3 hrs.

**COURSE OUTLINE**



**PERFORMANCE EVALUATION**

**Grade Breakdown**

|  |  |  |
| --- | --- | --- |
| Polylearn Movie/Lecture Quizzes A, B, C, D (missing 1 = agerage of 3) | | 10% |
| MoreSteam Quizzes | 10% | |
| Class participation\* | 10% | |
| Mini Project | 25% | |
| Practice Test | 5% | |
| Comprehensive 3 hr exam | 40% | |
| **Total** | **100%** | |

**\*Class participation:**

Quantitative measures – complete and on time (108pts - 10% total)

1. Electronic Index card – 3pts
2. Resume – 3pts
3. Mini-Project Ideas Assignment – 6pts
4. Draft project charter – 6pts
5. On time completion of online session MoreSteam quizzes – 33pts total (3 pts each)
6. “Stand-up” credit in class – 6pts
7. Tool Plan assignment – 6pts
8. Mini Project Elevator Speech 6 pts
9. MoreSteam Quickie Kaizen assignment – 6pts
10. Mini Project Survey – 3pts
11. CTQC Survey – 3 pts
12. Shingo Survey online – 3 pts
13. On-Time Practice Test – 3 pts
14. Zombie Hunter – 24 pts = 18 Team + 6 Instructor **(NOT INCLUDED IN SUMMER COURSE)**
15. Extra Participation Credit: Additional Poster version of Mini-Project – 12pts. (ps: If you get 90% or more on your mini-project, and 12 pts on your extra credit, and provide us with a 2x3 foot hard copy of your poster, in I will guarrentee that we will post it at the next Central Coast Lean Summit.)

***\* Note: If students do not achieve the 80% minimum on the exam required to proceed with certification, the exam may be retaken after a 30-day “cooling off” period. The original test score still determines the course grade.***

**POLICIES AND PROCEDURES**

#### Personal Integrity Policy

Your most valuable asset is your personal integrity. Exercise and develop this important asset in this course. The penalty for cheating is an **F for the course**. Cheating occurs when:

1. A student looks at other students' work during a quiz or exam or obtains help outside their assigned group on assigned homework sets or exams.
2. A student copies large sections of another author’s material without referencing it (plagiarism).
3. Students share answers to online quizzes or individual homework assignments.

In contrast to cheating, I believe it is beneficial to work in pairs and groups to study, discuss, and understand the material. This is especially true in addressing “supplemental exercises” at the end of each section. Feel free to discuss the online content, your projects, and/or supplemental exercises with your classmates or others to build your understanding of the material.

**You are responsible for anything that is said in class or any changes made to assignments**. Do not e-mail or call me asking, “What did I miss?” Find a buddy to share coverage responsibility. If your buddy is at a loss, please contact one of our able Teaching Assistants before going to me. cc me if you like.

**You are responsible for managing the inputs into your grade.** The points are there. I do not give additional projects to increase one's grade.