

Process Improvement, Quality, and Scheduling in Lean Operations

Semester: Winter Session 2009



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Course: # XBUS 915
Room: JR 119
Class #10006
CEUs: 3.0

Course Schedule: Course meets on Tuesdays, January 6, 2009, through March 10, 2009.

Course Times: Class will meet from 7:00 p.m. to 9:50 p.m. Ten classroom sessions.

Course Description and Objectives:

This certification course introduces you to the PDCA and DMAIC (Six Sigma) frameworks along with the following concepts: Kaizen, root cause problem solving, the visual factory, the seven tools of quality, and blitz approaches. Also covered are the essential tools needed for lean scheduling, encompassing descriptions of building blocks and eight lean scheduling methods including Kanban, Heijunka, and mixed-model production. This is the third course in the Lean Operations certificate course series.

Topics:

- Lean thought leaders; the lean view and Kaizen.
- Problem solving and PDCA. Different types of defects.
- Sporadic problems: the Seven Tools and Five Whys.
- Chronic problems and Six Sigma. Holding gains and sustainability.
- Improvement types and improvement events (blitz).
- Frameworks for lean scheduling and the relationships between lean and MRP, APS, and TOC. A brief introduction to CONWIP and POLCA.
- Managing queues and flow; the building blocks for lean scheduling.
- The effects of variation (statistical fluctuation and dependent events).
- Eight lean scheduling ideas: pull and Kanban; takt time; runners repeaters strangers; the pacemaker; mixed model scheduling, level scheduling and Heijunka; batch sizing; and demand stabilization.

Course Objectives:

By the end of this 10-week course, the student should be able to:

- Understand the symbiotic relationship between lean and quality.
- Appreciate the application of some quality techniques in a lean context.
- Have a general understanding of how lean and Six Sigma can work together.
- Appreciate the central role of scheduling in a lean context.
- Understand how a framework for the implementation of a lean scheduling system is developed, as well as have a working knowledge of core lean scheduling techniques.

As a part of the learning process, this class is also structured to encourage students to (a) share the best and the not so effective practices from their current work environment as it relates to the course subject matter, and to (b) provide a network resource to discuss pragmatic approaches to the real world lean operations' issues one might face in the workplace.

Course Structure:

In addition to classroom lecture, the instructor will use a variety of materials for instructional purposes, including: current articles from trade magazines and journals, DVD videos, and items to be included on the CD-ROM handout (tools, spreadsheets, sample documents, software programs, etc.).

Grading Criteria:

A total of 100 points can be earned in this class, with final grading subject to a curve or ranking adjustment as may be appropriate. Plus (+) and minus (-) levels of achievement are possible.

90-100 points = A	80-89 points = B	70-79 points = C
60-69 points = D	< 60 points = F	

A grade of D or F (below 70 points) **will not** qualify towards any CSUN Certificate (i.e., 2.0) in Lean Operations. Certificate programs require a C or 2.7 cumulative average across all courses taken. A 3.7 GPA, or above, for the whole program (all four courses) will earn the certificate with distinction.

Grading is based upon demonstrated learning and is composed of the following:

Attendance = 30 points (Attendance will be recorded)**
 Classroom Participation = 30 points
 Take Home End-Of-Course Quiz = 40 points
 Extra Credit Assignments (as discussed in class)

** You must be in attendance for 90% of the total class time to be eligible for Continuing Education Units (CEUs). Please advise the instructor in advance on those nights you will be unable to attend. More than two absences are considered a significant problem.

Required Text Books (provided in class as a part of your paid tuition):

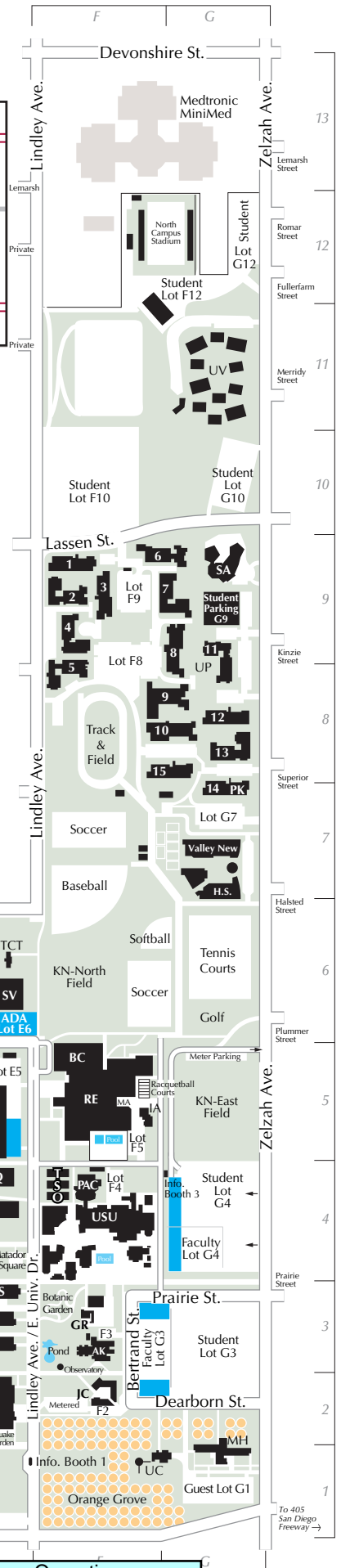
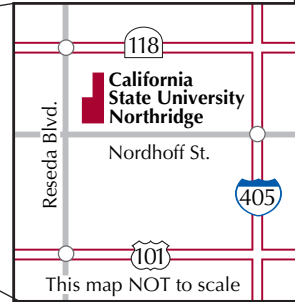
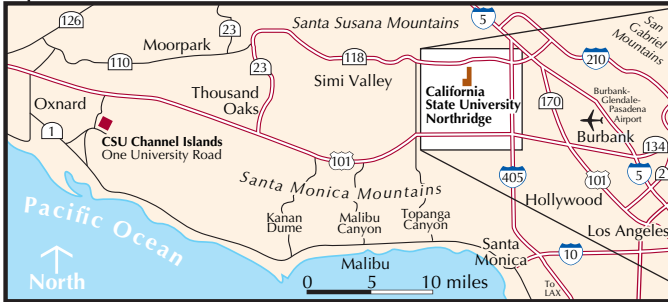
1. Process Improvement and Quality in Lean Manufacturing Participant Guide, APICS Educational & Research Foundation, September 2003 (APICS Stock # 01284)
2. Lean Scheduling Participant Guide, APICS Educational & Research Foundation, September 2003 (APICS Stock # 01286)
3. The Lean Enterprise Memory Jogger, 2002, Richard L MacInnes (Goal/QPC) –
 Note: the memory jogger is distributed in the Introduction to Lean Operations course (see your instructor if you have not attended this course yet).

Other Class Information:

1. Things to have in class: (a) a calculator capable of square root, (b) a highlighter, (c) pencils, and (d) your Participant Guide & Text. You are encouraged to mark-up your Guide.
2. Parking - \$5 per session in Student Lots, \$162 per semester. Fines are typically \$35.
3. Breaks – There will be one, 12-minute break at approximately the mid-point of each class. Individuals are expected to be back in class promptly. No dinners in class, please.
4. Not every topic of this ten-week course may pertain to your current job duties. Remember, this is an educational course stressing lean methodologies, not a job specific training course.

California State University Northridge

1811 Nordhoff Street
Northridge, California
91330



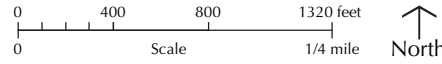
■ Americans with Disabilities Act (ADA) Parking

Building Name—Grid Location

- AA Asian American Studies House—B6
- AC Art Design Center—D6
- AG Art Gallery—D6
- AK Addie Klotz Student Health Center—F3
- AS Armer Screening Room—D2
- B Building "B"/Bank Building—D5
- BC The Abbott and Linda Brown Western Center for Adaptive Aquatic Therapy—F5
- BH Bayramian Hall (formerly Student Services Building)—C4
- BK Bookstore Complex, Matador—E2
- BL Black House—B6
- BP Donald Bianchi Planetarium—E3
- CC Children's Center—B6
- CH Chicano House—D5
- CI CSU Channel Islands
- CP Central Plant—C6
- CS Citrus Hall (formerly Science 3)—E3
- CT Campus Theatre—C1
- CY Cypress Hall (formerly Music)—D1
- E Education Administration—C5
- ED Michael D. Eisner College of Education—C5
- EH Eucalyptus Hall (formerly Science 2)—E3
- EX The Exchange (Food)—D5
- GR Greenhouse—F3
- HA-HG "H" Complex—D5
- IA Intercollegiate Athletics Office—F5
- JA C.R. Johnson Auditorium, Engineering—D5
- JC Jeanne Chisholm Hall/NCOD—F2
- JD Jacaranda Hall (formerly Engineering)—E5
- JH Juniper Hall (formerly Business)—C5
- JR Jerome Richfield Hall—C3**
- KN CRTS Racquetball—F5, Tennis Courts—C6
- KN EFLD (East Field)—G5
- KN GOLF—G6
- KN NFLD (North Field)—F6
- KN POOL—F5
- KN FTCT (Fitness Center/Nautilus)—E6
- LO Live Oak Hall (formerly Science 1)—E3
- LS Child and Family Studies Lab School 18330 & 18338 Halsted—B6 and B5
- LT Little Theatre—C1
- MA Matadome courts—F5
- MG Magnolia Hall (formerly Science 4)—E4
- MH Monterey Hall—G1
- MS MFA Studios—D6
- MZ Manzanita Hall—D2
- NA Charles H. Noski Auditorium—C5
- NH Nordhoff Hall—C1
- O Building "O"—F4
- OF CAM—(Off Campus—call department)
- OV Delmar T. Oviatt Library—D4
- PAC Performing Arts Center—F4
- PK Parking, Dept. Public Safety (DPS)—G7
- PPM Physical Plant Mgmt./Corp. Yard—C6
- RE Redwood Hall (formerly Kinesiology)—F5
- RH Recital Hall—D1
- S Building "S"—F4
- SA Satellite Student Union—G9

- SG Sagebrush Hall—E5
- SH Sierra Hall—C3
- SI Sierra Center—C3
- SN Santa Susana Hall (formerly Faculty Office Building)—D2
- SQ Sequoia Hall—E4
- ST Sierra Tower—C3
- STU Studio Theatre—C1
- SV Service Building—E6
- T Building "T"—F4
- UC University Club—F1
- UN University Hall—B4
- UP University Park Apartments—F-G, 8-9
- USU University Student Union—F4
- UV University Village Apartments—G11
- WC Women's Center Building—B5

Information (818) 677-1200 www.csun.edu
Public Safety 677-2111



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Public Relations

**Classroom Location: Process Improvement, Quality, and Scheduling in Lean Operations
Room #JR 330**