

A. 37:575:403: Section 82 Problem Solving Tools at Work

B. Course Description:

Labor Studies and Employment Relations Department: Access high-quality historical, qualitative, and quantitative evidence or research (Goal 5).

School of Management and Labor Relations: Demonstrate an ability to collect, analyze and synthesize information to make logical and informed decisions impacting the workplace. Use evidence to evaluate hypotheses, theories, and approaches to workplace issues (Goal III).

Additional Course Objective(s) from the Instructor: The interpretation of common statistics; the use of graphing software; correlation analysis and regression. Introduce methods and analytical tools applied in Quality Management systems.

C. LSER Objective: Access high-quality historical, qualitative, and quantitative evidence or research

D. Meeting Times: Mondays, 6:30 – 9:10 PM

**E. Meeting Location: Mercer County Community College
West Windsor Campus 1200 Old Trenton Road West Windsor, NJ 08550
Room Assignment: TBA**

F. Professor:

Michelle Lawrence

Office Hours: Monday evenings, after class.

Email address: michelle.lawrence@rutgers.edu Use this as point of first contact.

Phone: Work # 848-445-3557

Response Time: I will return calls and email messages within 24 hours, except weekends.

G. Text: An Introduction to Six Sigma and Process Improvement, Cengage, 2015, 978-1-133-60458-7 (Assorted handouts for statistics topics) (edition 1 or 2 is fine) Evans and Lindsay
Software Required: Statistical software in Excel 2007 (or higher) with Data Analysis Option installed.

H. Disability Services – Rutgers, the State University of New Jersey abides by the Americans with Disabilities Act of 1990, the Americans with Disabilities Act Amendments (ADAA) of 2008, and Sections 504 and 508 which mandate reasonable accommodations be provided for qualified students with disabilities and accessibility of online information. If you require an instructional and/or examination accommodation, please make arrangements with Katherine Birckmayer, MGR ACADEMIC PROGRAMS, 609-570-3419 kbirck@docs.rutgers.edu for assistance with reaching out to your home campus Office of Disability Services. I look forward to talking with you soon to learn how I may be helpful in enhancing your academic success in this course.

I. Assessments: This class is hands-on and features assessment of individual and group projects, rather than a lecture course that uses exams to assess learning. Course assessment is calculated as a weighted average of all projects.

J. Grades: Detailed project specifications are under separate cover. Please post final documents onto the Assignments Folder on Sakai.

K. Lecture Schedule: The following is an approximate lecture schedule. Project due-dates are tentative until confirmed. Assignments and readings represent the material to be covered during that class session. Students are expected to complete the readings prior to the class date on which they are listed.

| WK # | Class Dates | Six Sigma Lecture Topics | Problem Solving Projects and Workshops |
|-------------|--------------------|---|---|
| 1 | Jan 23 | Overview: Six Sigma and Quality Management Systems | # A Pareto Analysis Project # B Self-Analysis Project |
| 2 | Jan 30 | Ch-1 Foundations of Six Sigma: Principles of Quality Management | Pareto Analysis Project (Week 1) # C Leadership Assessment |
| 3 | Feb 6 | Ch-2 Principles of Six Sigma | Pareto Analysis Cont. (Week 2) # D S & M Team Building: Collaboration Team Building: Strengths and Weaknesses |
| 4 | Feb 13 | Ch-3 Project Organization, Selection, and Definition | Pareto Data Table Graphing Workshop #E Affinity Project |
| 5 | Feb 20 | Ch-4 Process Measurement | Pareto Data Project Due # F Website Q A |
| 6 | Feb 27 | Ch-5 Process Analysis | # G College Data Analysis Project Introduction and Assigning States # H Deming Project |
| 7 | Mar 6 | Ch-6 Process Improvement | College Data – Data Sets and Averages |
| March 11-19 | | SPRING BREAK | |
| 8 | Mar 20 | Ch-6 Process Improvement cont. | College Data - Descriptive Statistics # I Benchmarking Project |
| 9 | Mar 27 | Ch-7 Process Control | College Data – Charting # J Cause and Effect Diagram |
| 10 | Mar 27 | Ch-7 Process Control cont. | College Data – Confidence Interval # K Interrelationship Diagram |
| 11 | Apr 3 | Ch-8 Design for Six Sigma | College Data – Pivot Tables # L Process Flow Map |
| 12 | Apr 10 | Ch-8 Design for Six Sigma cont. | College Data – Correlation # M Force Field Analysis |
| 13 | Apr 17 | Ch-9 Implementing Six Sigma House of Quality | College Data – Regression Analysis # N Survey Design |
| 14 | Apr 24 | Ch-9 Implementing Six Sigma - 10 Implementation Myths of Six Sigma | College Data – Final Formatting |
| 15 | May 1 | - 10 Tips for Finishing a Six Sigma Project Successfully | Six Sigma Case Study: Larry the Golfer |

Assignments by Due Date

Note: Individual assignments must be submitted into the Sakai Drop Box ½ hour before class starts. In-Class Group Assignments are to be submitted in Paper Form at the end of class, a photo of the assignment should be uploaded into the Sakai Drop Box saved as a PDF. Late submission will be downgraded 1 letter grade. In cases of extenuating circumstances, contact the Professor Michelle Lawrence.

| Project Letter | Due Date | Assignment | Group vs Individual | In-Class or At Home | % of Grade |
|----------------|-------------|-----------------------------------|---------------------|---------------------|-------------|
| *A | Feb 20 ** | Pareto Analysis | Individual | Start In-Class | 15% |
| B | Jan 30 | Self-Analysis | Individual | In-Class | 5% |
| C | Feb 6 | Leadership Self-Assessment | Individual | Start In-Class | 3% |
| D | Feb 13 | S & M Team Building | Group | Start In-Class | 5% |
| E | Feb 20 | Affinity Project | Group | Start In-Class | 5% |
| F | Feb 27 | Website QA | Individual | Start In-Class | 5% |
| *G | April 25 ** | College Data Analysis* | Individual | Start In-Class | 25% |
| H | TBA | Deming Project | Group | Start In-Class | 5% |
| I | Mar 27 | Benchmarking | Individual | At Home | 5% |
| J | Apr 3 | Cause and Effect Diagram | Individual | Start In-Class | 5% |
| K | Apr 10 | Interrelationship Diagram Project | Group | In-Class | 5% |
| L | Apr 17 | Process Flow | Group | In-Class | 5% |
| M | Apr 24 | Force Field Analysis | Group | In-Class | 5% |
| N | May 1 | Survey Design | Group | In-Class | 5% |
| O | | Class Participation | Individual | | 2% |
| | | Total | | | 100% |

*College Analysis will be uploaded to the Drop Box. This is an ongoing project with several segments.

L. Attendance: Attendance is of critical importance. It is essential to keep up with the class material. Attendance will be taken in each class. If a student misses, (will miss) a class, then the student needs to send a courtesy e-mail message to the professor and the assigned work must be completed to receive credit.

M. Study Groups: Forming study groups will facilitate learning by keeping you focused, involved, and current in the course.

N. Communication Devices: No communication devices (cell phones, palm pilots, beepers, pagers, etc.) can be used in the classroom. In cases of emergency, please step out of the room.

O. Academic Integrity: All students are responsible for locating, reading, and abiding by the University Policy on Academic Integrity for Undergraduate and Graduate Students. The policy is available on-line at <http://cat.rutgers.edu/integrity/policy.html>

P. Take Home Assignments: The College Data Analysis project has been posted on Sakai under Resources. It must be handed in on time in its entirety. The submission must be complete; no partial assignment can be submitted. It must be posted to the Assignments Folder.

All other individual assignments require paper copy submission, with uploads to the Drop Box.

Q. Assessment: Posting of Grades: please check MyRutgers for your final grades.

| Letter Grade | Scores Based on Course Components |
|--------------|-----------------------------------|
| A | 90-100 |
| B+ | 85-89 |
| B | 80-84 |
| C+ | 75-79 |
| C | 70-74 |
| D | 60-69 |
| F | < 60 |

Note: The thresholds for final letter grades will be re-scaled if a conventional standard seems unreasonable.

R. Communication:

1. NETID Needed

Rutgers uses the Sakai system. In order to use this system, you must have a NETID and PW. A NETID is an account on one of the main systems at Rutgers (Pegasus, Andromeda, or RCI).

- **If you have a NETID**, you can currently ensure that you will be able to login to the system.

- **If you do not have a NETID**, please use the following page to attain one: <http://netid.rutgers.edu/>

- **If you have any problems**, please contact your local RUCS Help Desk. You can reach them at help@nbcs.rutgers.edu or 732-445-Help+

2. Sakai

To facilitate class learning, please access and print course documents needed for class from the course management system known as Sakai. Course documents are posted in folders under Resources.

Quick Start for Sakai: <https://sakai.rutgers.edu/access/content/public/quickmember.html>

Sakai website: <http://sakai.rutgers.edu/portal>

If you do not see this course listed, then the site is likely in the “More” dropdown box to the right of your tabs. You can rearrange the order of your sites or hide sites from previous semesters by using the Preference tool in My Workspace and clicking on the “Customize Tabs” action button.

S. Student E-Mail and Phone Numbers:

a. A student can forward mail from his/her Rutgers e-mail address to a preferred e-mail address. Go to <https://netid.rutgers.edu/index.htm> and select Manage Email Addresses. If you need assistance, call the RUHELP Desk at 848-445-4357.

Cautions: Hotmail has problems with e-mails with attachments. Also, some corporations spam e-mails with attachments.- If you have any problems, please contact your local RUCS helpdesk at help@nbcs.rutgers.edu

b. Students, also, have the responsibility to then inform the professor of any changes to their phone numbers (day and evening). Please use “**37:575:403**” in the Subject section to avoid being spammed.

Please sign your full name in all e-mail correspondence.

c. Please check your e-mail regularly, especially on the day of class, to learn if there are any changes in the class schedule, class requirements, or for other general announcements.

DO NOT REPLY ALL or Select ALL: Sakai Mail Tool, If you click on Select ALL or Reply ALL, every department staff member, instructors, teaching assistants and registered students associated with the course, will receive your correspondence.

T. Classroom Etiquette: Common courtesy is expected at all times.

U. Parking Impacts: Special events may impact parking.

V. Campus Closings: Freehold WMHEC - RU-BCC campus closing policy

Rutgers University: 732-932-INFO; <http://campusstatus.rutgers.edu>

Brookdale Community College: <http://www.brookdalecc.edu/about/emergency-communications/>

W. Excel and Data Analysis

• Additional suggestions:

Purchase Microsoft Office and Windows software at University discount prices on

- <https://software.rutgers.edu>.
- Log in with your RU NetID
- On the panel on the right, select MS Software for Personal Use, scroll down to view the Microsoft offerings
- You can pay with a personal check or credit card

For PC: Install the Excel Analysis Pack for additional statistical and analytical tools

- From the Office Button, select Excel Options, and Add-Ins
- In the inactive application section, select Analysis Tool Pack and hit GO and OK to install
- Use the Analysis Tool Pack from the Data Ribbon, Data Analysis option

The Analysis Tool Pack includes histograms, regressions, sampling data, Fourier analysis, et. al, and also includes several randomization functions, such as RAND and RANDBETWEEN

MAC Users - Microsoft Excel 2016 Analysis ToolPak Link address: <https://support.office.com/en-us/article/Load-the-Analysis-ToolPak-in-Excel-2016-for-Mac-617afc33-4af8-4530-b132-7b4e938890d0?ui=en-US&rs=en-SG&ad=SG&fromAR=1>

• **To upgrade to Office 2016**

For Home and Office 365 Go to the Office My Account page. Click Language and install options. Click Additional install options. Open the Version drop-down menu and select the 32-bit or 64-bit Office 2016 Preview. This will install the Office 2016 Preview on your device. You will stay on the Office 2016 Preview track until you uninstall the Office 2016 Preview or until Office 2016 is released.

For Students who need access to a computer, please contact Joe Walsh, Assistant Director, Off-Campus Programs at Freehold at 732-625-7012 or by email at joe.walsh@rutgers.edu for assistance.

Note: This course outline/syllabus is subject to change at the discretion of the instructor.

Note: Recommendations: Requests for recommendations must be made in writing after completion of the course.