

**A. 37:575:403:B6 Problem Solving Tools at Work**

**B. Course Description:** Overview of data collection and analysis; focus on fundamentals needed to understand the research of others or to collect surveys oneself. The interpretation of common statistics; the use of graphing software; correlation analysis and regression.

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

**D. Meeting Times:** **Tuesdays/Thursdays, 6:00 – 9:40 PM**

**E. Meeting Location:** C/D, **LEC (Labor Education Center), Room 133**  
<http://rumaps.rutgers.edu/location/labor-education-center>,

**F. Professor:** Sheila M. Lawrence, Ph.D.

**G. Email ID:** [smlawren@rci.rutgers.edu](mailto:smlawren@rci.rutgers.edu)

**H. Phone:** 973-596-6425 - please call between 9 AM and 9 P.M. (Please speak slowly, state the course #. Please spell your name, and give your phone number.) Please follow up with an e-mail message.

**I. Office Hours:** **In our classroom, prior to class from 5:00 – 6:00 PM**

**J. Text:** (edition 1 or 2 is fine) Evans and Lindsay, **An Introduction to Six Sigma and Process Improvement**, Cengage, 2015, 978-1-133-60458-7 (**Assorted handouts for statistics topics**)

**K. Special Needs** – 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 have a disability and may require some type of instructional and/or examination accommodation, please contact me early in the semester so that I can provide or facilitate in providing accommodations you may need. If you have not already done so, you will need to register with the Office of Disability Services, the designated office on campus to provide services and administer exams with accommodations for students with disabilities. Here are the particulars:

[Lucy Stone Hall](#), Livingston Campus, 54 Joyce Kilmer Ave., Suite A145, Piscataway, NJ 08854-8045

**E-mail Address:** [dsoffice@rci.rutgers.edu](mailto:dsoffice@rci.rutgers.edu) **Phone:** (848) 445-6800 • **Fax:** (732) 445-3388

I look forward to talking with you soon to learn how I may be helpful in enhancing your academic success in this course.

**L. Assessments:** This class is hands-on and features assessment of projects and Take Home Exams, rather than a lecture course that uses exams to assess learning. Course assessment is calculated as a weighted average of the following projects:

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

**N. 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 and assignments on the syllabus prior to the class date on which they are listed.

<b>Target Dates</b>	<b>Six Sigma Topic</b>	<b>Problem Solving Tools*</b>	<b>Statistics Topics (Materials have been posted on Sakai.)</b>
<b>May 26</b>	Ch-1 Foundations of Six Sigma: Principles of Quality Management	Overview  Excel Checklist;  <u>Intro</u> : #A Pareto Analysis  <u>Intro</u> : #B Force Field Analysis  <u>Intro</u> : #C Excel Data Analysis	The Where, Why and How of Data Collection
<b>May 28</b>	Ch-2 Principles of Six Sigma	<u>Intro</u> : #D Website QA (Quality Assurance)  <u>Intro</u> : #E Survey Design	Describing Data Using Numerical Measures
<b>June 2</b>	Excel Workshop	Bring your PCs/Macs	RU/CTAAR Rep, <b>Marcie Anszperger</b>
<b>June 4</b>	Ch-3 Project Organization, Selection and Definition	<u>Intro</u> : #F Deming Project	Normal Distribution  <b>Guest Lecturer on Deming – Deborah Lewitter</b>
<b>June 9</b>	Ch-4 Process Measurement	<u>Intro</u> : #G Benchmarking Project	Confidence Intervals and Sampling Size Determination
<b>June 11</b>	Ch-5 Process Analysis	<u>Intro</u> #H Cause and Effect Diagram	Introduction to Hypothesis Testing - Hypothesis Tests for Means
<b>June 16</b>	Ch-6 Process Improvement	<u>Intro</u> : #I Interrelationship Diagram	Estimation and Hypothesis Testing for Two Population Parameters
<b>June 18</b>	Ch-7 Process Control	<u>Intro</u> : #J Leadership Self- Assessment	ANOVA - One Way Analysis of Variance <b>Guest Lecturer on Six Sigma – Jane Borden – tentative</b>

<b>June 23</b>	Ch-8 Design for Six Sigma	<u>Intro</u> : #K Process Map	Correlation Analysis; <b>Excel Project Status</b>
<b>June 25</b>	Ch-9 Design for Six Sigma – Optimization and Verification	Allocation Project	<i>Regression</i> Guest Lecturer on the Baldrige Award: <b>Mike Kamarek,</b>
<b>June 30</b>		--	Guest Lecturer: <b>Mike Kamarek,</b> 7 Step Improvement Cycle
<b>July 2</b>	Ch-10 Implementing Six Sigma; Catch Up	Voice of the Customer; House of Quality	Larry the Golfer 6 $\sigma$ Case Study; Work Force Focus; 10 Implementation Myths of Six Sigma; 10 Tips for Finishing a Six Sigma Project Successfully; Starbucks Case Study

Order of Introduction	Assignment	Group vs Individual	In-Class or At-Home	Weight of Grade	Target Due Dates
A	Pareto Analysis	Individual	Start In-Class	10%	June 16
B	Force Field Analysis	Group	Complete In-Class	4%	June 4
C	College Data Analysis *	Individual	<b>At Home</b>	40%	July 2
D	Website QA	Individual	<b>At Home</b>	10%	June 11
E	Survey Design Project	Individual	Start In-Class	10%	June 4
F	<b>Deming Project</b>	Group	Start In-Class	5%	June 9
G	<b>Benchmarking</b>	Group	Start In-Class	4%	June 11
H	Cause and Effect Diagram	Group	Complete In-Class	4%	June 9
I	Interrelationship Diagram Project	Group	Complete In-Class	4%	June 16
J	Leadership Self-Assessment	Individual	Start In-Class	4%	June 23
K	Process Map	Group	Complete In-Class	5%	July 2
	<b>Total</b>			<b>100%</b>	

\* 20% Part I and 20% Part II

**P. 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.

**Q. Required:** Statistical software in Excel 2007 (or higher). Reading assignments must be completed prior to each lecture. **Communication Devices:** No communication devices (cell phones, palm pilots, beepers, pagers, etc.) can be used in the classroom.

**R. Assessment:**

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

**Assessment Policy:**

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.

**S. 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>

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

**U. Take Home Exams:** All Take Home Exams are posted on Sakai under Resources. Take Home Exams must be handed in on time in their entirety.

**Penalty:** 10% for every grade component is submitted late, with a **max of one week**.

Submissions must be complete; no partial assignments can be submitted.

Once the Take Home Exams are returned to the students, then late submissions cannot be accepted in order to maintain fairness for all students.

**Note: Project due dates are tentative until confirmed.**

**V. 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, Eden, 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](mailto: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.

### **W. 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 <http://www.eden.rutgers.edu/tools.php> and click on forwarding. Enter your NetID and PW. Then fill in your preferred e-mail address.

**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](mailto: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.**

**Please do not Reply All to the Instructors.** Otherwise, several members of the staff and instructors will receive your 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.

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

**Y. Classroom Etiquette:** Common courtesy is expected at all times.

**Z1. Parking Impacts:** Special events may impact parking.

**Z2. University/Campus Closings:** 732-932-INFO (New Brunswick); <http://campusstatus.rutgers.edu>