

## 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. **Human Subjects Certification** – Certification for IBR (Institutional Review Board (Report ID 19037103)) was awarded to me on March 15, 2016 through the Collaborative Institutional Training Initiative (CITI Program) here at Rutgers.

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

**H. Office Hours:** **In our classroom (or Carey Library), prior to class from 5:00 – 6:00 PM**

**I. 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**)

**J. 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.

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

**L. 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.

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

<b>Week #</b>	<b>N. Tentative Dates, per guest lecturers' availability</b>	<b>Six Sigma Topic</b>	<b>Problem Solving Tools (on Sakai)</b>	<b>Statistics Topics (Varies on Sakai by Guest)</b>
1	May 31	Ch-1 Foundations of Six Sigma: Principles of Quality Management	Overview  <u>Intro: #A Pareto Analysis</u>  <u>Intro: #B Leadership Self-Assessment</u>	Starbucks Case Study  Levels of Measurement  <u>Assign States</u>
2	June 2	Ch-2 Principles of Six Sigma	<u>Intro: #C College Data Analysis</u>  <u>Intro: #D Website Quality Assurance (QA)</u>  <u>Intro: #E Survey Design Project</u>	Descriptive Statistics  <u>Writing Tips</u>
3	June 7		=	<b>Guest – Marcie from CTAAR – Excel Workshop</b>
4	June 9		<u>Intro: #F Deming Project</u>	<b>Guest – D. Lewitter on Deming</b>
5	June 14	Ch-3 Project Organization, Selection and Definition	<u>Intro: #G Benchmarking</u>	<u>Excel Checklist</u>
6	June 16	Ch-4 Process Measurement	<u>Intro: #H Cause and Effect Diagram</u>	Correlation
7	June 21	Ch-5 Process Analysis	<u>Intro: #I Interrelationship Diagram</u>	Regression
8	June 23	Ch-6 Process Improvement	<u>Intro: #J Process Map</u>	
9	June 28	Ch-7 Process Control	<u>Intro: #K Force Field</u>	Work Force Focus;

			Analysis	
10	June 30	Ch-8 Design for Six Sigma	--	Excel Project – Open Session
11	July 5		--	Guest: Mike Kanarek: 7 Step Improvement Cycle Workshop
12	July 7	Ch-9 Design for Six Sigma – Optimization and Verification Ch-10 Implementing Six Sigma	Catch Up; House of Quality	Six Sigma PPTs - 10 Implementation Myths of Six Sigma; - 10 Tips for Finishing a Six Sigma Project Successfully; - Larry the Golfer - Six Sigma Case Study; Starbucks <a href="http://sakai.rutgers.edu/portal/site/sirs">http://sakai.rutgers.edu/portal/site/sirs</a>

<b>Note: All assignments are to be uploaded to the Drop Box and are to be submitted in paper form per the respective due date.</b>				
Order of Introduction	Assignment	Group vs Individual	In-Class or at Home	Weight of Grade
A	Pareto Analysis	Individual	Start In-Class	10%
B	Leadership Self-Assessment	Individual	Start In-Class	7%
C	College Data Analysis *	Individual	Start In-Class	30%
D	Website QA	Individual	At Home	10%
E	Survey Design Project	Individual	Start In-Class	10%
F	Deming Project	Group	Start In-Class	5%
G	Benchmarking	Group	Start In-Class	5%
H	Cause and Effect Diagram	Group	In-Class	5%
I	Interrelationship Diagram Project	Group	In-Class	5%
J	Process Map	Group	In-Class	5%
K	Force Field Analysis	Group	In-Class	5%
	Guests (as scheduled)	Individual	In-Class	3%
	<b>Total</b>			<b>100%</b>

\* No paper copy needs to be submitted. Please post under the Assignments Folder.

Sequence	Assignment	Updated Target Due Dates
1	Leadership Self-Assessment	June 2
2	Survey Design Project	June 7
3	Website QA	June 9
4	Cause and Effect Diagram	June 14
5	Pareto Analysis	June 16
6	Interrelationship Diagram Project	June 16
7	Process Map	June 21
8	Force Field Analysis	June 28
9	Benchmarking	June 30
10	Deming Project	July 5
11	College Data Analysis *	July 7
	Guests (as scheduled)	

**O. 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.

**P. 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.

**Q. 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.

**R. 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>

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

**T. Projects:** All projects are posted on Sakai under Resources. They 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.

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

#### **U. Communication:**

##### **1. NETID Needed**

Rutgers uses the Sakai system. To use this system, you must have a NETID and PW. A NETID is an account on one of the main systems at Rutgers (e.g., Scarletmail 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.

#### **V. 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.

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

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

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

**Z1. University/Campus Closings:** 732-932-INFO (New Brunswick);  
<http://campusstatus.rutgers.edu>

## **Z2. Excel and Data Analysis**

### Additional suggestions:

Purchase Microsoft Office and Windows software at University discount prices on

- <http://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

## **Z3. Student-Wellness Services:**

### **Just In Case Web App**

<http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

### **Counseling, ADAP & Psychiatric Services (CAPS)**

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ [rhscaps.rutgers.edu/](http://rhscaps.rutgers.edu/)

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

### **Violence Prevention & Victim Assistance (VPVA)**

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / [vpva.rutgers.edu/](http://vpva.rutgers.edu/)

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

**Disability Services**

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854  
/ <https://ods.rutgers.edu/>

The Office of Disability Services works with students with a documented disability to determine the eligibility of reasonable accommodations, facilitates and coordinates those accommodations when applicable, and lastly engages with the Rutgers community at large to provide and connect students to appropriate resources.

**Scarlet Listeners**

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.