

**Note: This is an in-person (in classroom) course utilizing the Canvas learning management system. This is not an online class.**

**Syllabus for Semester Summer 2019**

**Department of Labor Studies and Employment Relations - Rutgers University**

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

**B. Course Description:** This course provides an overview of problem solving tools and techniques. It focuses on the fundamentals needed to understand the research of others. Included will be the use and interpretation of Excel and Data Analysis.

**C. Course Objectives (37:575:403:01)**

Labor Studies and Employment Relations Department:

- Formulate, evaluate and communicate conclusions and inferences from quantitative information (Goal 12).

Rutgers Undergraduate Core Curriculum:

- Quantitative & formal reasoning (Goal W)

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 II).

**D. Meeting Times: Tuesdays/Thursday, 1:00 – 5:00 PM**

**E. Meeting Location: C/D, LEC (Labor Education Center), Room 115**

<http://rumaps.rutgers.edu/location/labor-education-center>

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

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

**H. Office Hours:** In our classroom or the James Carey Library, in the building, prior to class, roughly from 12:00-1:00 PM and after class, or by appointment; if you attend my other class's office hours, please e-mail me so that I am best prepared;

**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. Excel:** **Excel Work can be done at the library or the computer labs.** Only Excel 2016 (either PC or Mac) can be used in the class. It is free while you are a student at Rutgers. Further details are in Part Y below.

**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. 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.

**N. 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.

**O. Required:** 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.

### Summer Session

| Module # | Tentative Dates, per guest availability | Six Sigma Topic   | Problem Solving Tools (on Sakai)  | Statistics Topics<br>(Varies on Sakai by Guest)   |
|----------|---|---|---|---|
| 1        | May 28                                  | Ch-1 Foundations of Six Sigma: Principles of Quality Management | Overview<br><br><u>Intro: #A Pareto Analysis</u><br><br><u>Intro: #B Leadership Self-Assessment</u> | Starbucks Case Study<br><br>Levels of Measurement<br><br><u>Assign States Excel Checklist</u> – Review Document in Chapter 1 Folder prior to class. |
| 2        | May 30                                  | Ch-2 Principles of Six Sigma                                    | <u>Intro: #C College Data Analysis</u><br><br><u>Intro: #D Website Quality Assurance (QA)</u>       | Descriptive Statistics<br><br><u>Writing Tips</u>   |

|    |         |   |   |   |
|----|---------|---|---|---|
| 3  | June 4  | Ch-3 Project Organization, Selection and Definition       | -- Intro: #A Pareto Analysis<br><br>Intro: #E Survey Design Project   | Bring your PCs/Macs and your one week of data in Table 1 of the Pareto Project<br><br>Brainstorming               |
| 4  | June 6  | Ch-4 Process Measurement                                  | -- Intro: #A Pareto Analysis - continued<br><br>Intro: #E Survey Design Project - continued   | Multi-Voting  |
| 5  | June 11 | --  | <b>Excel Workshop; Bring your PCs/Macs and download the Excel file under Resources/Guests; view the YouTube videos, especially those on pivot tables.</b> | <b>Guest – Marcie from CTAAR – Excel Workshop</b>   |
| 6  | June 13 | Ch-5 Process Analysis                                     | Intro: #G Cause and Effect Diagram  | Charting  |
| 7  | June 18 | Ch-6 Process Improvement                                  | Intro: #H Benchmarking TBD<br><br>Intro: #I Process Map   | Confidence Interval   |
| 8  | June 20 | Ch-7 Process Control;<br>Ch-8 Design for Six Sigma        | Intro: #J Interrelationship Diagram   | Correlation   |
| 9  | June 25 | Ch-9 Design for Six Sigma – Optimization and Verification | Intro: #K Force Field Analysis  | Work Force Focus<br><br>Regression<br><br><b>Open Session of College Data Analysis</b>                            |
| 10 | June 27 | --  | Materials posted under Guests Folder  | - Time for Completing CTAAR Survey by cell phone<br>Guest: Mike Kanarek: <u>7 Step Improvement Cycle Workshop</u> |
| 11 | July 2  | Ch-10 Implementing Six Sigma                              | Intro: #F Deming Project TBD<br>Catch Up;<br><br>Intro: #L, 2 Concepts;   | - Time for Completing CTAAR Survey by cell phone<br><br>Excel Project – Six Sigma PPTs - 10 Implementation        |

|  |  |  |  |   |
|--|--|--|--|---|
|  |  |  | <b>Intro: #O House of Quality -TBD</b> | Myths of Six Sigma;<br>- 10 Tips for Finishing a Six Sigma Project Successfully;<br>- Larry the Golfer - Six Sigma Case Study; Starbucks<br><a href="http://sakai.rutgers.edu/portal/site/sirs">http://sakai.rutgers.edu/portal/site/sirs</a> |
|--|--|--|--|---|

**No assignments can be accepted after June 27 except for College Data Analysis (CDA).**

### Sorted by Target Due Dates

**\* Note: Except for College Data Analysis, all projects are to be uploaded to the Assignments Folder and are to be submitted in paper form per the respective due date.**

| Project Letter | Project                           | Group vs Individual | In-Class or at Home | Points      | Class Due Date | Target Due Dates |
|----------------|-----------------------------------|---------------------|---------------------|-------------|----------------|------------------|
| B              | Leadership Self-Assessment        | Individual          | Start In-Class      | 100         | 3              | 06-04-2018       |
| D              | Website QA                        | Individual          | Start In-Class      | 100         | 4              | 06-06-2018       |
| G              | Cause and Effect Diagram          | Group **            | Start In-Class      | 60          | 5              | 06-11-2018       |
| A              | Pareto Analysis                   | Individual          | Start In-Class      | 100         | 6              | 06-13-2018       |
| I              | Process Map                       | Group **            | In-Class            | 60          | 7              | 06-18-2018       |
| J              | Interrelationship Diagram Project | Group **            | In-Class            | 60          | 8              | 06-20-2018       |
| K              | Force Field Analysis              | Group **            | In-Class            | 60          | 9              | 06-25-2018       |
| E              | Survey Design Project             | Individual          | Start In-Class      | 100         | 10             | 06-27-2018       |
| C              | College Data Analysis *           | Individual          | Start In-Class      | 300         | 11             | 07-02-2018       |
| L              | Course Reflection                 | Individual **       | In-Class            | 50          | 11             | 07-02-2018       |
| M              | Attendance & Participation        | Individual          | In-Class            | 0           |                |                  |
| N              | Guests (as scheduled)             | Individual          | In-Class            | 10          | 11             | 07-02-2018       |
| F              | Deming Project (not assigned)     |                     |                     | 0           |                |                  |
| H              | Benchmarking (not assigned)       |                     |                     | 0           |                |                  |
| O              | House of Quality (not assigned)   |                     |                     | 0           |                |                  |
|                | <b>Total</b>                      |                     |                     | <b>1000</b> |                |                  |

**P. Assessment Policy:**

**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.

**Q. 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>

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

**S. Take Home Assignments:** The College Data Analysis project must be handed in on time in its entirety. The submission must be complete; no partial assignment can be submitted.

**T. Student E-Mail and Phone Numbers:**

a. Please note that it is [Rutgers IT policy](#) that you use your Rutgers.edu email for all Rutgers related course correspondence.

b. Students, also, have the responsibility to then inform the professor of any changes to their phone numbers (day and evening).

c. Please check your e-mail and the course Canvas site 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. Announcements will be communicated through Canvas which will trigger email notification to your Rutgers.edu email. Additionally, you may download and install the Canvas Student App for your mobile devices so you can be notified via the app. To download/install the app refer to: [Canvas Student App iOS](#), [Canvas Student App Android](#).

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

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

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

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

## Y. Excel 2016 and Data Analysis

**To access free Microsoft Office**, including Excel while a Rutgers student, please click go to the Rutgers Software Portal:

<https://oit.rutgers.edu/university-software-portal>

Go to the link above and select the University Software Portal link. On the page that follows, select Microsoft Software for Students. You will be prompted to log in using your NetId. Then follow the instructions for downloading and installing.

**Excel Work can be done at the library or the computer labs.** If you do not have a help option, then your version of Excel, Excel Light, or the student version, as well as open source software and Numbers do not have the Analysis Toolpak/Data Analysis.

### **- PC users: 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**

<https://support.office.com/en-sg/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 download the Analysis ToolPak Add In: Go to Tools at the top toolbar in Excel; at the bottom of the list, please select "Excel Add-ins"; then select Analysis ToolPak" and click OK. Confirm by selecting Data; then Data Analysis.

## Z. 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/

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.

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