



RUTGERS

UNIVERSITY | NEW BRUNSWICK

School of Management & Labor Relations

Problem Solving Tools, 37-575-403-90, Fall 2025, Asynchronous Online

Course Description

We are excited to be offering the Problem-Solving Tools at Work as a remote asynchronous class. 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.

Read each section of this Syllabus carefully. Note: if you are new to Canvas, complete the Canvas tutorials under [Course Tools Tutorials](#).

Instructor Information

SHEILA M LAWRENCE

Assistant Teaching Professor

smlawren@smlr.rutgers.edu

Student Hour, Wed. 5-6 PM (EST)

My Teaching Philosophy and Short Bio

[Teaching Philosophy](#)

[Short Bio](#)

Course Objectives

By the end of this course, you should be able to:

1. Explain the quality management principles and the Six Sigma principles
2. Apply the quality tools underlying the DMAIC process - Design, Measure, and Analyze
3. Apply the quality tools underlying the DMAIC process - Improve and Control
4. Design Excel charts and apply Excel data analysis
5. Relate quality processes with a workforce focus

Labor Studies and Employment Relations Department

Course Objective (37-575-403)

Goal II) Quantitative, Qualitative and Analytical Skills: Apply appropriate quantitative and qualitative methods for research workplace issues.

- Formulate, evaluate, and communicate conclusions and inferences from quantitative information

Goal III) Research Skills: 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.

- Use evidence-based analysis to appraise the validity of various hypotheses, theories, and approaches to workplace issues

Course Delivery Format

This course runs from **September 2 through December 21**. It is delivered entirely online through the Learning Management System Canvas. There will be no Face-to-Face, in-person classroom sessions except for an optional virtual "meet your professor and classmates" live Zoom session.

The course is delivered in synchronous mode. This means the learning activities and communication take place outside of real-time. You do not have to log in at any specific scheduled time; you log in at your convenience. However, sometimes, if you're working in groups on an assignment, you would need to set up a live session via Canvas Conferences, Webex, or ZOOM.

Note: Even though you don't need to log in at any specific time, you are required to adhere to all coursework due dates.

Virtual Drop-In/Student Hour

The Virtual Drop-In/Student Hour will be conducted on **Wednesdays, 5 PM to 6 PM (EST)** through WebEx. Or upon request.

[Professor Sheila Lawrence's WebEx Room](#)

For the Virtual Drop-In Hour Sessions: Project and Excel questions, brainstorming ideas on issues at Rutgers or at your jobs or internships, etc., are welcome. I am also available for a private or group Webex session as needed, for example, with regard to Excel/Data Analysis. Although the Virtual Drop-In Sessions are not mandatory, I highly encourage you to attend.

Canvas Tutorials & Technical Support

If you are new to Canvas or need a refresher tutorial, visit:

- [Getting Started In Canvas for Students](#)
- [Canvas \(Links to an external site.\)](#)Canvas is Web Accessibility Guidelines compliant. More on [Canvas Accessibility Standards](#)

If you need technical assistance at any time during the course or to report a problem with Canvas:

- Contact [Rutgers IT Help Desk \(Links to an external site.\)](#). 833-648-4357, email help@oit.rutgers.edu, accessible 24 hours a day, 7 days a week.
- Refer to the [Canvas Student TutorialLinks to an external site.](#)
- Canvas [Student Guide PDF Version](#)
- Access Rutgers Canvas via the [MyRutgers Portal](#), rutgers.instructure.com, mobile app, and <https://canvas.rutgers.edu>
- For Canvas assistance, Passwords, or any other computer-related technical support, contact the [Rutgers Canvas Help Desk](#).
- - help@canvas.rutgers.edu

WebEx

If you are new to WebEx, review the [WebEx Quick Start Guide](#). To access WebEx, select the Cisco Webex tab on the left navigation menu on this Canvas site. Join the scheduled session.

Accommodations

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation ([See Documentation Guidelines](#)). If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you and your instructor with a Letter of Accommodation. Please discuss the accommodations with your instructors as early in your courses as possible. To begin this process, please complete the [registration form](#). I am happy to facilitate the process if you need me to. Just let me know.

Office of Disability Services contact and address

Lucy Stone Hall, Livingston Campus, 54 Joyce Kilmer Avenue, Suite A145, Piscataway, NJ 08854-8045.

- E-mail Address: dsoffice@rci.rutgers.edu
- Phone: (848) 445-6800 • Fax: (732) 445-3388
- <https://ods.rutgers.edu/>

Rutgers Diversity Statement

The Division of Student Affairs works to create an environment of **inclusion** that respects and affirms the inherent dignity, value, and uniqueness of all individuals, communities, and perspectives. Our practices reflect awareness and understanding of the complexity of identity and the increasing interconnectedness of our world. It is our **responsibility** to promote and maintain a community of compassion, embracing the rich dimensions of **diversity** and facilitating opportunities for understanding and the expression of both individual and shared truths.

Course Materials

Textbook:

- Evans and Lindsay, *An Introduction to Six Sigma and Process Improvement*, Cengage, 2015, 978-1-133-60458-7 (Edition 1 or 2, or the e-book is fine.)

Software/Applications:

- Excel 2016 or higher - you can download from the [Rutgers University Software Portal](#)[Links to an external site.](#)(free, no cost to students).
 - [How to access and install Excel](#)
 - Clear your [cache and cookies](#)

Rutgers LinkedIn Learning courses/modules:

- Free Access [Rutgers LinkedIn Learning](#)

Supplemental Course Materials:

- Other course materials, such as videos, articles, and readings, will be provided (and posted), as needed, in this Canvas course site in their respective Weekly Modules and Objectives and Activities.

Computer and Other Technology Requirements

- Access to the internet
- Reliable computer
- Headphones/Headsets - recommended

- Webcam - optional
- Microsoft Word
- [Basic Computer Specifications for Canvas \(Links to an external site.\)](#)

For convenience, you can also download/install the Canvas Student App for Android or iOS devices. Follow the instructions on the respective app centers:

- [Canvas Student App for Android \(Links to an external site.\)](#)
- [Canvas Student App for iOS](#)

Course Structure & Schedules

This course is structured in a weekly module format. A Module is a chunk of the course content broken out by topic and text chapter. Each Module equates to a Week. Each week starts on a Monday and ends on a Sunday. Exceptions are the first and the last week of the semester.

The weekly/module activities are noted in the Modules section under the corresponding **Module # Tasks & Goals** pages. Each Task & Goals page includes:

- Topic introduction of the week
- Learning Materials
 - Readings
 - Multimedia (Audio and/or Videos, Lecture recordings)
- Learning Activities - what activities you will be doing to help you learn
 - Discussion
 - Project work
 - Assignments
- Assessment - the activities that will be assessed (graded)

The course is divided into 15 Weeks as follows:

- [Module 1 \(September 2 - 7\): Chapter 1 - The Foundations of Six Sigma: Principles of Quality Management](#)
- [Module 2 \(September 8 - 14\): Chapter 2 - Principles of Six Sigma](#)
- [Module 3 \(September 15 - 21\): Chapter 3 - Project Organization, Selection, Definition](#)
- [Module 4 \(September 22 - 28\): Chapter 4 - Process Measurement](#)
- [Module 5 \(September 29 - October 5\): Chapter 5 - Process Analysis](#)
- [Module 6 \(October 6 - 12\): Chapter 6 - Process Improvement](#)
- [Module 7 \(October 13 - 19\): Chapter 7 - Process Control](#)
- [Module 8 \(October 20 - 26\): Chapter 8 - Design for Six Sigma; Concept and Design Development](#)
- [Module 9 \(October 27 - November 2\): Chapter 9 - Design for Six Sigma; Optimization and Verification](#)
- [Module 10 \(November 3 - 9\): Chapter 10 - Implementing Six Sigma](#)
- [Module 11 \(November 10 - 16\): Lean Six Sigma](#)
- [Module 12 \(November 17 - 23\): Pivot Tables Workshop](#)

- [Module 13 \(December 1 - 7\): Multivoting](#)
- [Module 14 \(December 8 - 14\): Workforce focus on Quality](#)
- [Module 15 \(December 15 - 21\): Course Wrap Up](#)

Assessments (Graded Activities)

Assessments are all assignments, forums, projects that are *Graded*. All of the course's Published assessments, including due dates and links to the assessment portals; forums, projects, quizzes, etc., can be found below in the Course Summary section. These assessments are also listed in their respective Module section.

Discussion Forums

Discussion forums have **two due dates**. Please pay attention to both the *initial post (due on Wednesdays)*, and the *replies to your classmates (due on Saturdays)*. All Discussion forums close on the Sunday of the week they are opened.

Projects

For all the "project" assignments, you have the option to work on them individually or in pairs. You can choose who you want to work with should you decide to pair up with a classmate. Whether you work individually or in pairs, you each will need to submit your work individually.

Grading Structure

The table lists grading components and their weight toward the final grade

Grading Components	# of Points	% of Final Course Grade
Discussion Forum Participation	150	15%
Assignments	760	77%
Excel Projects	75	8%
Total	985	100%

Grading Scale

The table describes the points range and the associated letter Grade

Points Range	Grade
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90 - 100	A
88 - 89.99	B+
80 - 87.99	B
78 - 79.99	C+
70 - 77.99	C
69.99 and below	F

Rutgers Support Resources for Your Well-Being

Rutgers Student Health Services:

- Rutgers Student Affairs is dedicated to the health of the whole student body, mind, and spirit. It accomplishes this through a staff of qualified clinicians and support staff. [Health, Counseling, and Wellness services](#) are available at several locations throughout Rutgers University.

Crisis Intervention - Student Health

- [Crisis Situations](#)
- [In the Wake of Trauma](#)

Academic Services:

- For academic support, including tutoring, please visit the [Rutgers - New Brunswick Learning Centers](#).
- For coaching help with writing skills and assignments, visit the [Rutgers - New Brunswick Writing Tutors in the Learning Center](#).
- Many library resources are available online. Assistance is available through phone, email, and chat. For information, check the [Rutgers Libraries website](#).

Veteran Services:

- - Rutgers is proud to support veterans. If you are a veteran of the armed forces, please visit the [Office of Veteran and Military Programs and Services website](#) for more information.

Guidelines for a Respectful Learning Environment

Let's work together to create a supportive and engaging learning environment for everyone! Please be mindful to communicate in a courteous and responsible manner *at all times*. Inappropriate behavior, including offensive language and harassment, is not acceptable. When

participating in discussions or communicating with your classmates and instructor, aim for the utmost professionalism and respect. Be sure to follow the [Discussion Post Guidelines](#) when communicating in this course.

Academic Integrity

Be sure to review and abide by the [Rutgers Academic Integrity](#) policy, and complete the [Academic Integrity Contract](#) assignment (also accessible in Module 1).

GenAI Guideline

The use of GenAI, such as ChatGPT, is prohibited for this course. Generative AI tools, such as ChatGPT, GPT-4, DALL-E, and other AI-based content creation platforms, are strictly prohibited in the coursework, assignments, and assessments unless otherwise specified by the instructor. This prohibition does not extend to AI-powered tools commonly used for proofreading, grammar correction, accessibility checks, Microsoft Word's grammar correction tool, Grammarly, Turnitin Draft Coach and Google. Violations of this policy will be treated as academic dishonesty, in accordance with the [Rutgers' Academic Integrity Policy](#) on plagiarism and cheating.

Staying on Track

Online learning requires a high level of discipline, dedication, and time management skills. While online learning offers you flexibility and convenience to learn from any place at any time, *you are still expected to **adhere to all due dates***.

To help you stay on track:

- Have access and backups to a reliable computer, and access to the Internet
- Log in to Canvas for your course ***on a daily basis***
- Check for any announcements, updates to the syllabus, assignments, and/or discussions and respond accordingly
- Actively participate in the Discussion Forum
- Complete the assigned readings and/or media
- Complete the assigned exercises and projects
- Adhere to all due dates

In case of computer failure

Make sure you have an alternative plan of access to your Canvas course in case your computer. Additionally, back up your important documents and assignments as attachments on a flash drive or other external device or e-mail material.

Where to Next?

After reviewing the content of this Course Syllabus, proceed to Modules.