

**IE 403 – Quality Planning and Control  
Fall 2022 - 2023**

---

**Team**

Instructor

Z. Didem Demir [didem.demir@sabanciuniv.edu](mailto:didem.demir@sabanciuniv.edu)

Office Hours

Thursday 11:30 – 12:00

Teaching Assistants

Ayda Amniattalab

[ayda@sabanciuniv.edu](mailto:ayda@sabanciuniv.edu)

Melis Tuvana Sarioğlu

[mtuvana@sabanciuniv.edu](mailto:mtuvana@sabanciuniv.edu)

Learning Assistants

Berfin Rumeysa Karakış

[berfinrumeysa@sabanciuniv.edu](mailto:berfinrumeysa@sabanciuniv.edu)

Mert Keçeci

[mertkececi@sabanciuniv.edu](mailto:mertkececi@sabanciuniv.edu)

**Meeting Times and Locations**

Lecture Thursday 08:40-10:30 am, at FASS G062 physically

Lecture Thursday 10:40-11:30 am, at FASS G018 physically

**Content**

The course will be carried out with emphasis to the DMAIC (Define, Measure, Analyse, Improve, Control) cycle. The contents of the lectures are organized in the following order:

**Define**

Quality control systems and quality management

Process Mapping

**Measure**

Measurement Systems Analysis

Data Collection and Patterns in Data

Process capability analysis

Acceptance sampling

**Analyse**

Confidence Intervals

Process Characterization and Estimation

Hypothesis tests

T tests

ANOVA

F test

Chi Square Test

Regression

**Improve**

FMEA (Failure Modes and Effects Analysis)

**Control**

Methods of statistical process control (SPC)

---

**Lecture Notes, Textbook and Reading Material**

The course content will be delivered primarily based on the lecture notes. The lecture notes will be available on SUCourse+ before the lectures. The lecture notes cover the entire content of the course. Presentations shown during lecture hours will be a selected subset from the notes and students are obliged to read the entire content after the lectures.

The following textbook is the secondary resource:

Montgomery, D.C., *Statistical Quality Control: A Modern Introduction*, 6<sup>th</sup> Edition, John Wiley & Sons.  
ISBN 978-0470-23397-9 (International Student Version).

The sections of the textbook associated with the material covered in the lecture notes should be read by the students regularly **after** the topics are discussed in the class. Additional reading material may be assigned or suggested by the instructors and the TAs from time to time during the semester.

**Software: Minitab Release 19**

The courses will be delivered using Minitab as the statistical analysis software. Therefore, all students are responsible to have a running version of Minitab Release 19; details for installing and licensing Minitab will be announced on the first day of the lectures and recitations. Along with this,

1. Minitab exercises will be done during lecture hours as well as recitations and quizzes will be necessitating Minitab solutions.
2. During the recitation classes, Minitab applications will be exemplified; therefore, all students are expected to follow the recitation lecture by personally doing the Minitab exercises using their laptops.
3. There will be some in class exercise (quizzes) online and they will include computer exercises that require Minitab analysis as well. The same is true for the physical Midterms and Final.
4. Assignments during the term will usually include analyses on Minitab as well as their practical interpretations.

**Term Lecture Planning and Grading**

The lectures and assessments of this term are going to be conducted as given in the table below.

	<b>Lecture</b>	<b>Assessment</b>
1	October 6	-
2	October 13	-
3	October 20	-
4	October 27	-
5	November 3	<b>In Class Exercise (Quiz) 1</b>
6	November 10	-
7	November 17	-
8	November 24	<b>Midterm</b>
9	December 1	-
10	December 8	-
11	December 15	-
12	December 22	<b>In Class Exercise (Quiz) 2</b>
13	December 29	-

14	January 5	-
		<b>Final (date TBA)</b>

The letter grade will be based on the percentages of the components given below:

Project	15%
Assignments	10%
In-class exercises (Quizzes)	20%
Midterm	25%
Final	30%

The dates of the assessments are announced in the above timing table, please follow the additional announcements as the term progresses for any changes.

The students' overall grade will be calculated with the percentages given in the table above. Later, the highest score will be treated as 100 and others grades will be adjusted with this normalization. Those who score less than 40 after the normalization will not be able to pass this course.

---

### In-class Exercises

In-class quizzes are composed of short (30-45 minutes) exercises using Minitab or multiple-choice/open ended/fill in the blanks tests to be done individually during the regular class meetings. The SuCourse+ will be the medium for online tests and quizzes but the students are required to be present in the classroom in order to take the quiz. **There is no make-up for missed in-class exercises.** The in-class exercises will all be graded and will be given following the submission of a similar assignment on the topics.

---

### Assignments and Projects

Students may be given daily or weekly assignments during the term. Assignments will be announced on the SUCourse+. Submissions for daily or weekly work will be graded and also be correlated with the results of the following in-class-exercise for academic integrity and personal contribution. There is no make-up for missed assignment submissions. **Due dates are strictly applied; no late work is accepted.**

2 Projects will be assigned as group work. It can either be an article review or a case-study elaboration. Follow the announcements in SuCourse+ for additional information and timing. **Due dates are strictly applied; no late work is accepted.** Students are not allowed to discuss and/or share their work with other students unless the work is assigned as a group work.

---

### Midterm and Final Exams

Midterm and Final are going to be conducted according to University Regulations, physically on campus Each exam will be composed of two main parts and grading breakdown will be announced prior to each test:

1. A classical examination (multiple choice, fill in the blanks, interpretations and composition type of open-ended questions)
2. Case study type of exercises using Minitab to be submitted as Minitab analysis output and practical interpretation.

**The midterm and the final exams will be 2 hours long.**

---

There will be only one single make-up exam which will be given during the second week of the final period that suits all of the eligible attendees. Students to take a make-up test should provide legal documentation to the faculty administrative office. Do not contact your instructor individually about the make-up test. **There is no make-up for the make-up test!**

---

### **Attendance**

Students are expected to participate in lecture hours and recitation classes. Attendance will be taken and recorded and will be used as a “leverage” in final mark calculation.

---

### **Academic Integrity**

Students are expected to honor the academic integrity principles according to the SU rules and procedures. Non-compliance to academic integrity principles through plagiarism, using or accomplishing another person's work, and/or submitting previously used work will be penalized severely. Please see [INSTRUCTION LETTER FOR STUDENT CODE OF CONDUCT AND DISCIPLINE](#) on the internal SU web.

<http://www2.sabanciuniv.edu/yonerge/SR/E-ISR-C210-01.html>

---

### **Announcements and SUCourse+**

Students are responsible for all announcements made during the regular class meetings and recitation hours. Starting from the second week of classes, students should follow the SUCourse+ site for this class regularly as they are responsible for all announcements and postings on this site without any other type of notice.

---