

**IE 403 – Quality Planning and Control  
Fall 2020 - 2021**

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**Team**

Instructor

*Z. Didem Demir*

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Office Hours

Thursday 10:30 – 11:30

Online at the same Zoom link

Teaching Assistants

*Ezgi Genç*

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Learning Assistants

*TBD*

**Meeting Times and Locations**

Lecture Thursday 8:40-10:30 am, online at Zoom\_synchronous

Lecture 1 hour, online asynchronous

**Join Zoom Meeting**

Topic: [didem.demir@sabanciuniv.edu](mailto:didem.demir@sabanciuniv.edu)'s Personal Meeting Room

<https://zoom.us/j/4338358251?pwd=UFJpQkg3aFk4TnE5SGx3YkpSdWIzdz09>

Meeting ID: 433 835 8251

Passcode: v5kSE7

Please make a note on your personal calendar with the above given Zoom link for the live online sessions. Online Lectures will be recorded and uploaded to SuCourse+ after the session i

**Course 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)

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**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.

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**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,

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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. The exams and quizzes will be online and include computer exercises that require Minitab analysis as well. A word processor program such as Microsoft Word, Notepad, Adobe etc. should also be loaded and running in the students' laptops so that Minitab outputs can be compiled during the examinations.
  4. Assignments during the term will usually include analyses on Minitab as well as their practical ,nterpretations.
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## Term Lecture Planning and Grading

The lectures and assessments of this term are going to be conducted as given in the table below. There will be 2 hours of synchronous lecture which will be recorded and uploaded to SuCourse+ as well as 1 hour of asynchronous lectures also available in SuCourse+. Recitations will also be asynchronously recorded.

Lecture	Date	Online	Online Assessment
1	October 8	Synchronous	-
2	October 15	Synchronous	-
3	October 22	Synchronous	-
4	October 29	Asynchronous	-
5	November 5	Synchronous	In Class Exercise (Quiz) 1
6	November 12	Synchronous	-
7	November 19	Synchronous	-
8	November 26	Synchronous	Midterm
9	December 3	Synchronous	-
10	December 10	Synchronous	-
11	December 17	Synchronous	In Class Exercise (Quiz) 2
12	December 24	Synchronous	-
13	December 31	Synchronous	-
14	January 7	Synchronous	In Class Exercise (Quiz) 3
			Final (date TBA)

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' final 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.

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### 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. **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.

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### **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.**

A Project will be assigned as a 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.**

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Students are not allowed to discuss and/or share their work with other students unless the work is assigned as a group work.

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### **Midterm and Final Exams**

The SuCourse+ will be the medium for online tests and quizzes. 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 2-2,5 hours long**

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There will be only one single make-up test which will be given on the last day or the day after the last day of the final exam period. 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!**

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### **Attendance**

Students are expected to participate in lecture hours and recitation classes. Attendance will be recorded online 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](http://www2.sabanciuniv.edu/yonerge/SR/E-ISR-C210-01.html) on the internal SU web.  
<http://www2.sabanciuniv.edu/yonerge/SR/E-ISR-C210-01.html>

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### **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.

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