

# IE 401 - Production and Service Systems Operations

## Syllabus 2021 Spring

**This syllabus is prepared due to the online transformation of our education system because of the COVID-19 Pandemic.**

### Lectures and Locations

#### Lectures

Live on Tuesday 08:40-09:30 <https://sabanciuniv.zoom.us/j/4489189741>  
Live on Wednesday 14:40 -16:30 <https://sabanciuniv.zoom.us/j/4489189741>  
Lectures will be recorded and uploaded to Google Shared Drive.

#### Recitations

Live on Monday 17:40-18:30 Section A1: <https://meet.google.com/zhi-kvxx-vzv>  
Live on Monday 17:40-18:30 Section A2: <https://meet.google.com/fgc-axwo-ith>  
  
Live on Tuesday 11:40-12:30 Section B1: <https://sabanciuniv.zoom.us/j/8975288826>  
Live on Tuesday 11:40-12:30 Section B2: <https://meet.google.com/qdz-heap-kad>

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### Team

#### Instructor

Emre Özlü [eoazu@sabanciuniv.edu](mailto:eoazu@sabanciuniv.edu)

#### Office Hours

Fridays – 12:40-13:30 at [here](#)

#### Teaching Assistants

Rabia Taşpınar  
([rtaspınar@sabanciuniv.edu](mailto:rtaspınar@sabanciuniv.edu))

#### Office Hours

Thursday  
14:40-15:10

#### Zoom Links

<https://sabanciuniv.zoom.us/j/91718498660>

Fatih Habacı  
([fatih.habaci@sabanciuniv.edu](mailto:fatih.habaci@sabanciuniv.edu))

Wednesday  
08:40-09:10

<https://sabanciuniv.zoom.us/j/92380332260>

Sinan Emre Koşunda  
([sinankosunda@sabanciuniv.edu](mailto:sinankosunda@sabanciuniv.edu))

Monday  
13:40-14:10

<https://sabanciuniv.zoom.us/j/8975288826>

#### Learning Assistants

Tuana Ezgi Mendirek

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#### Responsible For

Section A1

Ezgi Öztaş

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

Section A2

Serra Akyıldız

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

Section B1

Elif Numanbayraktaroğlu

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

Section B1

Mert Özçelik

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Section B2

### Learning Outcomes

On completion of the course, students should be able to

- Develop demand-forecasting models using time series methods.
- Apply the fundamental inventory management models (including the EOQ, newsvendor, (Q,R) and (s,S) models) to relevant problems.
- Describe the major steps in the manufacturing planning and control (MPC) hierarchy (including APP, MPS and MRP), and their relationships.
- Formulate and solve production planning problems.
- Use spreadsheets in solving forecasting and inventory management problems.
- Discuss the fundamental MRP and JIT concepts.

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- Relate industrial engineering and operations research methods obtained in previous courses to production planning and control domain.

### Textbooks

- Nahmias S. and Lennon Olsen, T., Production and Operations Analysis, 7<sup>th</sup> edition, Waveland Press. <https://www.vitalsource.com/referral?term=9781478628385>
- Nahmias, S., Production and Operations Analysis, 5<sup>th</sup> or 6<sup>th</sup> edition, McGraw-Hill.

### Reference books

- Vollmann, T. E., Berry, W. L., Jacobs, F. R., Whybark, D. C., Manufacturing Planning and Control for Supply Chain Management.
- Silver, E. A., Pyke, D. F., Peterson, R., Inventory Management and Production Planning and Scheduling.
- Stevenson, W. J., Operations Management.

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### Course Content

Forecasting  
Inventory Control and Management  
Aggregate Production Planning (APP)  
Master Production Scheduling (MPS)  
Material Requirements Planning (MRP)  
Lot Sizing Techniques

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### Grading

Exam Type	Date	Content	Weight
Pop Up Quiz (TopHat)	Each week	Real time lecture content	10.0%
Midterm#1	01.04.2021 19:40-21:00	Forecasting and EOQ	20.0%
Midterm#2	07.05.2021 19:40-21:00	Newswendor, Q,R Model and APP	30.0%
Final	TBA	Comprehensive	40.0%

### Pop Up Quiz

Quiz will be held during the online lecture hours. The aim is to have at least 1 quiz each week. Questions will be related to the subject that is just discussed during the lecture and can be answered in a few

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seconds. TopHat application will be used for the quiz. Students should install the app to their phones/tablets or they can use their laptop's web browser to reach the software online. The grades of the quiz are 0 and 1. The worst 2 quizzes will be deleted for each student at the end of the semester. The rest will be considered for the final grade calculations.

### Midterm and Final Exams

Exam rules and regulations will be announced prior to each exam.

The date, contents and weights of each Midterm can be seen above. Exams will be held in real time using TopHat (<http://tophat.com>) and Zoom (<https://zoom.us>) together. Students will use cell phones to enter zoom to help TA's proctoring and they will use their PC to have the exam online by TopHat.

**Extra info will be announced before each exam.**

### Make-up Policy (for Pop up Quizzes, Midterms and Final Quiz)

- There will be a ***single comprehensive*** Make-up.
  - Acceptable reasons for missing an exam are medical illnesses (with medical reports), family emergency incidents and internet/electricity related problems. If you will not be able to take an exam on time, you have to let the instructor know ***before the exam***. However, if you have a medical reason documented/approved by any health center, you are not allowed to take the exam and you do not need to inform the instructor beforehand. You can email your report later on.
  - There will only be 1 make-up exam for 1 missing exam. So, if a student miss 3 exams the make-up exam will only be counted for one of them. Other 2 exams will not be graded.
  - There will be no make-up for quizzes. The worst 2 quizzes will be deleted for each student at the end of the semester for the compensation.
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### Other Notes

- Students are responsible for all announcements made during the lecture hours and recitation hours, on the SUCourse website and through e-mails by the instructor and/or the TAs.
  - No "extra" opportunity is provided to increase an individual student's course grade.
  - 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.
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This document may be modified during the semester (Spring 2020-2021) due to unforeseen reasons. Students are responsible for such modifications that will be announced during the lectures and at the SUCourse+ website.