

IE 375 PRODUCTION PLANNING Fall Semester, 2020-2021

Instructor	Sections	Office	E-mail	Ext.	Office Hours
Dr. Nesim K. Erkip	01	EA320	nesim@bilkent.edu.tr	1032	By e-mail appointment

Lectures (OL): Mon 15:30–17:20, Thurs 8:00–9:50 **Location:** ZOOM, ZOOM

Lectures (H): Mon 17:30–19:20, Thurs 8:30–10:20 **Location:** ZOOM, BZ02

Course Assistants	Office	E-mail	Office Hours
Egemen Elver	TBA	egemen.elver@bilkent.edu.tr	TBA

Text: *Production and Operations Analysis* by S. Nahmias and T. Olsen, 7th Edition (available at the Reserve Library) – A reading list is available at the WEB site of the course.

Communication and Course Web Page:

It is your responsibility to follow the course web page for updates and additional information. Most changes or alerts will be sent to your e-mail account available in the STARS system throughout the semester.

The address for the WEB page is: <https://courses.ie.bilkent.edu.tr/ie375/>

Course Description:

The course concentrates on the analysis of production planning systems using mathematical programming and other analytical techniques. Areas investigated will include forecasting; integrated production-inventory systems; inventory and lot-sizing models; machine scheduling, capacity planning, and supply networks. *Credit units: 3, Prerequisite: IE 202.*

Course Objectives:

- Introduce basic conceptualization of planning problems for production systems.
- Teach students fundamental problem areas of “Production Planning” and, to introduce the relation between planning and control activities, as well as issues related to system design.
- Teach approaches that utilize mathematical modeling and optimization to solve problems and emphasize the importance of solving a planning problem analytically.
- Introduce and emphasize the role of using performance measures.
- Build appreciation of complexity for more detailed and up-to-date “Production Planning” related problems; build appreciation of limitations of analytical approaches.
- Maintain mutual respect and effective interaction between students and instructor/assistants.

Outline:

- Introduction (2 hours)
- Forecasting (6 hours)
- Aggregate Production Planning (APP) (8 hours)
- Inventory Planning, Deterministic and Stochastic Inventory Problems (14 hours)
- Machine Scheduling: Introduction, classification, simple problems (6 hours)
- Problems in Supply Chains and wrap-up (4 hours)

Conduct of the Course:

Lecture Schedule: Each week number of hours of teaching may vary and there might be changes throughout the semester. Please, follow the WEB page of the course.

Recitation/Review Schedule: Recitation/Review sessions are planned to be held after during lecture hours. A tentative program of Recitation/Review times will be made available in the beginning of the semester. There might be changes and hence, please, follow the WEB page of the course to make sure that you do not miss your class.

A detailed program will be made available in the first 2 weeks of the semester. *Depending on whether teaching is on-line or hybrid, updates will be made throughout the semester.*

Grading - If all is on-line:

- Mini-Homework (5) – 10%
- Case (3) – 30%
- Exam - 20% - October 27, Tuesday, Time and Location: TBA (on-line or in class)
- Final Exam - 40% - Date, Time and Location: TBA (on-line or in class)

Grade FZ (for on-line case):

- If all assignments are graded until the due date for submission of FZ grade: You have to collect at least 15 points out of 60 points to be eligible for the final exam. 60 points can be collected satisfying all requirements except *Final Exam* (40 %).
- If some assignments are not graded until the due date for submission of FZ grade: You have to collect at least (15 - % of ungraded assignments) points out of (60 - % of ungraded assignments) points to be eligible for the final exam (or 15 points if you had not submitted those final assignments). Note that (60 - % of ungraded assignments) points can be collected satisfying all requirements except *Final Exam* (40 %) and % of ungraded assignments.

Grading - If at some point hybrid education starts:

Depending on the date to start hybrid education, adjustments will be made. However, if date is suitable grading is described below.

- Mini-Homework (5) – 10%
- Case (3) – 30%
- Midterm Exam – 30% - October 27, Tuesday, Time and Location: TBA (in class)
- Final Exam - 30% - Date, Time and Location: TBA (in class)

Grade FZ (for hybrid case):

- If all assignments are graded until the due date for submission of FZ grade: You have to collect at least 25 points out of 70 points to be eligible for the final exam. 70 points can be collected satisfying all requirements except *Final Exam* (30 %).
- If some assignments are not graded until the due date for submission of FZ grade: You have to collect at least (25 - % of ungraded assignments) points out of (70 - % of ungraded assignments) points to be eligible for the final exam (or 25 points if you had not submitted those final assignments). Note that (70 - % of ungraded assignments) points can be collected satisfying all requirements except *Final Exam* (30 %) and % of ungraded assignments.

Academic Dishonesty: Academic misconduct is not tolerated, and violations will be treated in accordance with the University policy.

- For homework assignments: Discussion of the course material and working in groups are effective ways of learning. However, this does not mean that you can copy the assignment from one of your friends. You can discuss with your friends, but you should be alone, without any written solution in front of you, when you actually prepare your assignment. It is extremely important to understand the value of this exercise in the process of learning. Any violation of the above understanding will result measures outlined in the student rules and regulations.
- For cases: You will be asked to form groups of 2 to solve each case. You are not allowed to communicate with other groups, but instead you will be allowed to ask the TA about some questions you have. The communication among the group members is essential and expected for the success of the outcome. Any violation of the above understanding will result measures outlined in the student rules and regulations.
- For exams: You are expected to act in accordance with the following statement that you will be asked to sign. *Academic integrity is expected of all students of Bilkent University at all times, whether in the presence or absence of members of the faculty. Understanding this, I declare that I shall not give, use or receive unauthorized aid in the examination.* Any violation of the above understanding will result measures outlined in the student rules and regulations.

Homework/Case Submission Policy: For all the assignments due-dates are fixed; no late assignment will be accepted. More information will be available in the statement of the assignment on how to submit and due-dates and times.

Homework Grading Policy: The homework grades will not be only based on the correctness of the answers provided, but on the perceived degree of effort on the returned assignment. This will hopefully leave no motivation to students to use other solutions, as even without obtaining any correct answers one can obtain full credit. The detailed grading scale will be announced for each assignment separately. Late submissions will not be accepted.

Make-up policy:

- (1) There is no make-up for the homework or case assignments. In some rare cases your grading percentages may be modified by the course instructor.
- (2) For exams, if you have a legitimate health reason:
 - a. To satisfy university requirements, you should follow the administrative path and submit your health report officially.
 - b. You should contact the instructor immediately (same day) after the expiration date of your health report. If you do not contact, you may lose your right to get a make-up. The make-up exam can be at any time (oral or written) after the expiration date of the health report.

Solutions to exams, homework and claims for grade change:

(1) In standard semesters, where in-person education is held, no solutions would be distributed for the exams, or any of the assignments; Instead for each of the homework and exams a detailed “Comments” document would be prepared. In on-line education, the sketch of the solution will be distributed for all assignments and exams. A comments document will still be available on the questions asked and will discuss several issues related to the question, including the way that grading was performed, as well as possible extensions and interpretations. It will also contain information on your performance, your successes, common mistakes, etc.

(2) For any of the assessment activities, you are expected to pick up your assignment (except the exams). If you have any concerns about the way that your work has been graded, please write your claim, and ask for re-grading. The outcome will be mailed to your e-mail account. Note that office hours of the teaching assistant should be used to pick up your assignment or to check your exam. In some cases additional hours may be announced and you are expected to come within those hours. If you will not be able to make at those hours, you can write an e-mail to the teaching assistant asking for an appointment.

Privacy policy: Grade information and other personal information available to us will not be disclosed publicly. Please, do not demand to learn somebody else’s grade or other pertinent personal information. Also phone inquiries are not accepted.