

Grade FZ (taken from IE102 Syllabus) – You have to hand in all the homework. Otherwise, you receive an FZ.

IE102 Fall 2019 Homework II- Due: 14 October, Monday until 10.00 am.

IMPORTANT: READ BEFORE YOU START WORKING ON THE HOMEWORK

Information on Homework II

- Homework II is 1% Make sure that you review course material before you start. Cite sources used if any.
- Homework assignment will be conducted in groups of 2. We randomly form the groups. You can find your group member and his/her contact information in the e-mail. **If you cannot reach your group member by all means, indicate this on the cover page of your submission.**
- Grading Policy: The grading scale for each question is 2 points (correct), 1 point (partially correct), and 0 (no effort or no submission).
- Academic Dishonesty (taken from IE102 Course Information): **Academic misconduct is not tolerated, and violations will be treated in accordance with the university policy.** For 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.
- Submission Information: An assignment submission box will be placed in front of office EA307 on the morning of the submission date and will be removed at the time of the deadline. You need to put your assignment in the designated box before the submission deadline. **Submission via e-mail is NOT accepted.**

Contact TA Çağla Dursunoğlu if you have questions related to this HW:
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Question 1:

The following activities are tasks a TA should be doing. You are given those activities, their predecessors and their durations.

Activity	Immediate Predecessors	Duration (minutes)
A	-	30
B	A	15
C	A	30
D	B	20
E	B	15
F	C	60
G	D	10
H	E,F,G	50
I	H	15
J	H	15
K	H	30
L	I,J,K	120
M	L	30

- Draw the AON (Activity on Node) network.
- Draw the AOA (Activity on Arc) network.
- Find the earliest start time and earliest finish time for each activity.
- Find the latest start time and latest finish time for each activity.
- Find the slack for each activity. Compute the completion time of activity. Which of the paths is a critical path?

Question 2:

You are given a set of tasks in order to complete a production. The tasks to be performed, their immediate predecessors, and their estimated durations are as follows:

Task	Tasks that Must Precede	Time
A	-	30 minutes
B	A	5 minutes
C	-	2 minutes
D	C	3 minutes
E	-	7 minutes
F	E	25 minutes
G	-	15 minutes
H	G	10 minutes
I	H	2 minutes
J	I, F, D, B	10 minutes
K	-	15 minutes
L	J, K	30 minutes

- Draw the AON (Activity on Node) network.
- Draw the AOA (Activity on Arc) network.
- Find the earliest start time and earliest finish time for each activity.
- Find the latest start time and latest finish time for each activity.
- Find the slack for each activity. Which of the paths is a critical path?
- Assume that due to some technical malfunction, the process E is interrupted for 6 minutes. By how much will the total process will be delayed? What is the critical path in this case? If you use a machine which will reduce the task E from 7 to 2 minutes, will the process still be delayed?