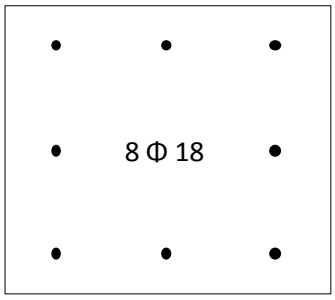
CE 382 HOMEWORK 5[1]

For the given column below draw the interaction diagram. Materials are given as C30 and S420. Apply material factors $\gamma_{mc} = 1.5$, $\gamma_{ms} = 1.15$. In order to draw the interaction diagram calculate the uniaxial compression (N_{or}), uniaxial tension, and balanced points first. Additionally, calculate the points for the given neutral axis depths c.

c (mm)
400
350
300
250
125
70
50
30



Clear cover: 40 mm

Column: 350 x 350 mm

Reinforcement: 8Φ 18

Draw the minimum eccentricity line and maximum axial load limitation lines according to the TS500 and Turkish Seismic Code on the same graph.

Additionally, put the following moment – axial load couples $(M; N)$ on to the interaction diagram and comment for these points.

M (kN-m)	N (kN)
20	2300
40	2000
10	1500
80	1000
60	500
160	1200
120	2000
20	-100
110	100

[1] ATTENTION TO ALL STUDENTS
Assignment Date and Time: May 18, 2012 @ 17:00 p.m.
Due Date & Time: May 22, 2012 @ 23.30 p.m.
This homework is distributed electronically via METUONLINE CE382 website. The students should hand over their finished work via the same way electronically. The homework submissions that do not obey above conditions will be counted as void.