Programming Assignment 01: Instructions

E2-203

Code:

1. Comment your codes properly. Make sure your code is readable.
2. There should be two main programs to simulate:
    a. MPSK and MQAM: main1
    b. An arbitrary four-point constellation: main2
3. Code for MPSK and MQAM: Following inputs are required to be entered during run time:
    a. MPSK or MQAM: This specifies the modulation scheme (On entering 'MPSK' it should choose MPSK scheme and on entering 'MQAM' it should choose MQAM scheme)
    b. Constellation size, e.g., 4, 16, 64
    c. For example, the code should work if we type: **main1 MPSK 8**
    d. Follow these instructions strictly. No more interaction should be initiated by the program. If the above command does not work as is, then we will not evaluate your code.
4. Code for arbitrary constellations: It should be able to import constellation points from a .csv file. For example, you can do this using 'readtable' function. A sample CSV file is attached. In it, the rows correspond to the different points in the constellation. The first column is the x-coordinate and the second column is the y-coordinate.

    For example, the code should work if we type: **main2 file_name.csv**. The program should not ask for any inputs.

5. Output: Codes should be generating two figures, corresponding SEP curve and decision regions.
    a. For the SEP plots, choose sufficiently many samples such that the results are statistically accurate up to an SEP of 10^{-4}.
    b. For the decision regions, show the constellation points on top of the corresponding decision regions.

Uploading:

1. Upload your codes as a .zip file in teams under General->Assignments
2. Use the name format 'Assignment#_team##' for the .zip file. Use the assignment no. in place of # and your team no. from the excel sheet in place of ##. For example, Team 2 would use the following file name: Assignment1_team2.zip