EEE 432 (Spring 2020)

HW (Due: May 16, 23:55)

Design an OFDM simulator in MATLAB which operates between 875Mhz-882.68Mhz. Channel bandwidth is 7.68 MHz with 512 subcarriers with the subcarriers spacing 15 kHz, i.e. the LTE subcarriers are spaced 15 kHz apart from each other.
Modulation schemes are QPSK, 16QAM, 64QAM.
No need to simulate Cyclic prefix.
Draw and comment on the BER curves from SNR 4dB to 20dB (4:2:20) for all three modulation and coding scheme using your OFDM

Some Notes on Technical Requirements
Note that you are not allowed to use the built in functions from Matlab (or, other resources) to complete the project (except for MATLAB's basic functions). You must write your own algorithm, and conduct your simulations using that code.
Both the Matlab files and the project reports will be processed by **turnitin**. In addition, the m files will be checked via the **Moss** software.
Finally, note that what is important to clearly demonstrate that you have worked on the project for a sufficient amount of time, and have done your own work. It is not as important to have all the pieces completed correctly or thoroughly.

Reporting Requirements
Your report should contain all the relevant information about the set-up used, results obtained and your comments on the results. Please also include your MATLAB code inside your report either as an appendix or in the related parts. The specific format is up to you, but please make sure to properly label each figure, include relevant captions, point to the right results in your explanations, etc. It should include a title page, brief introduction and outline as well as any references used. The references used should be cited within the report wherever they are used.
The report must be typed using an advanced wordprocessor (e.g. latex, word, etc), and should be submitted as a pdf file on the course Moodle site. Please also submit your Matlab codes as a separate (single) file. *The submission links for the pdf report and the Matlab m file will be separate.*