EE698H: 5G Wireless Standards Design **EE Dept. IITK**

MATLAB Assignment-1

CRC implementation *May. 2023*

1. Implement the 24-bit CRC calculation and validation for the standard. The code should work for

   - both the CRC polynomials specified in the standard.
   - for any given transport block length. Consider as of now 24 and 319784.

   You should write one MATLAB function to

   - generate and append CRC.
   - validate CRC. The output of this function should be 1 if CRC is validated and 0 if CRC is not validated.

   Call both these functions in a MATLAB file. To cross check your code, introduce error by flipping bits in the transmit transport block. The "CRC validation" function should return zero.

Please follow these Coding instructions:

- Properly comment your code.
- The code should execute and generate the desired output.
- Your submission should be self-contained (should include all the files required for running it).
- Avoid hard-coding the values of the variables for specific configurations. The code should be generic.

Please follow these submission instructions.

- Deadline is 28th of May, 11:59 pm.
- All codes should be in one .zip/.rar folder. Please do not submit separate files.
- Upload your properly commented in the drive link which will be provided by eMasters team. Name your code as rollno.zip.
- Please submit one final zip file.
- Please do not mail your files to me.

Please also read this carefully.

- Each one of you have to individually do all the reading and MATLAB assignments. You can discuss with your friends but you will have to completely write your own code.