

## CENG 525 HW 2

**Announcement Date : 10.12.2019**

**Due Date : 18.12.2019 (In class)**

### **Issues:**

- Write Matlab code in order to perform tasks required for each question and **show** the result **properly**. (Note that PCs in the university computer lab are equipped with Matlab)
- All associated deliverables must be submitted in a zip file named 'YourID\_YourName.zip'
- The code must be in a form that is directly executable (i.e. the zip file must contain all data or other scripts required and the results **must** be displayed automatically)
- The main file of the bundle must be specified (i.e. main.m).
- This is an individual work. Scripts having even a single line in common will be discarded.

- 1) Obtain the centered and log-scaled spectrum of the 'question\_1.tif'.
- 2) Apply the following spatial domain Sobel mask to the image 'question\_2.tif' in frequency domain and obtain the corresponding spatial domain image.

-1	0	1
-2	0	2
-1	0	1

- 3) Apply the ideal low-pass filter, with a radius of 30 pixels, to the image 'question\_3.tif'.
- 4) Apply the high-pass Butterworth filter of order 2 and  $D_0 = 60$  to the image 'question\_4.tif'.
- 5) Apply a proper notch-reject filter to the image 'question\_5.tif' for noise reduction.