

The Document Analysis and Recognition (1901341) programming project would be marked as a competition. All student groups are given 3 types of images or scanned documents and are required to perform different image/color enhancement operations. The marking criteria includes functionality (software operating properly), Simplicity (easy to use interface), Implementation (covered operations including filtering in spatial and frequency domain, and color space analysis). A user manual with sufficient description needs to be submitted as well. Competition will take place on 24th April, 2019 (KASIT Lab 302).

Spatial filtering (8 marks)

Blurring: standard average (box), weighted average

Sharpening: Laplacian (1st and 2nd derivative, alpha boosting, Sobel in horizontal and vertical directions)

Frequency filtering (7 marks)

Blurring: Ideal low pass filter, Butterworth low pass filter, Gaussian low pass filter

Sharpening: high pass filter, Butterworth high pass filter, Gaussian high pass filter

Color spaces (3 marks)

Showing RGB, HSV in separated channels, and conversion from one space to another.

Documentation: 2 marks for user manual

For more information on creating a MATLAB graphical user interface (GUI), you can check the following urls:

- <https://www.youtube.com/watch?v=Ta1uhGEJFBE>
- https://ece.uwaterloo.ca/~nnikvand/Coderep/gui%20examples/A4-Gui_tutorial.pdf
- https://www.mathworks.com/help/matlab/creating_guis/about-the-simple-guide-gui-example.html