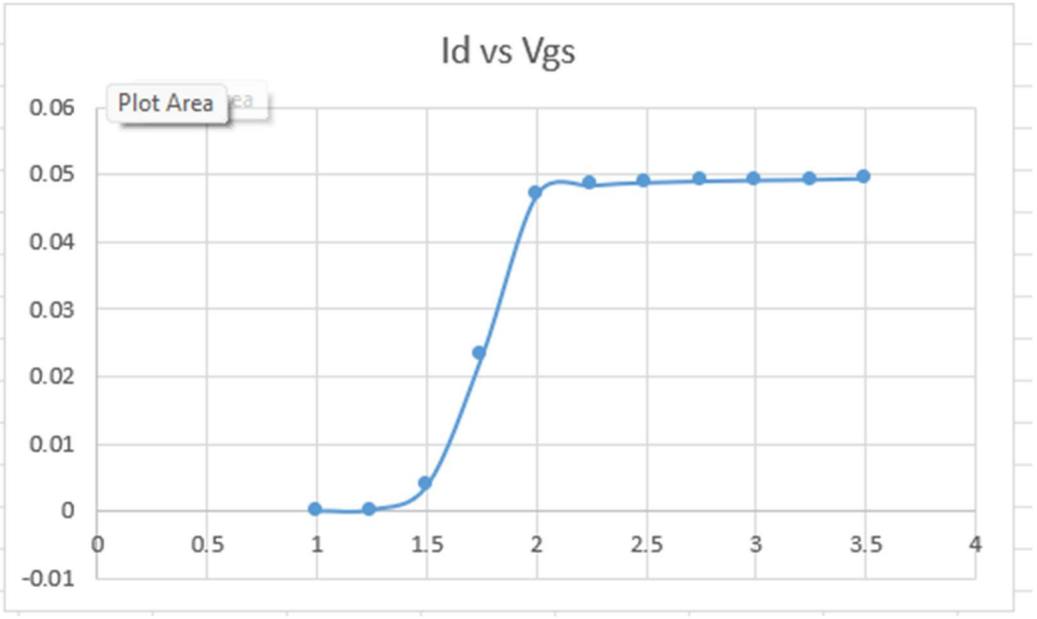
Post-measurement exercise:

1. Threshold voltage, VTN From the measured ID vs VGS curve, at what value of VGS does the NMOS turn on? Set this as the threshold voltage VTN, of your transistor.

From my graph Id vs Vgs the threshold voltage seams to be 1.5 volts:



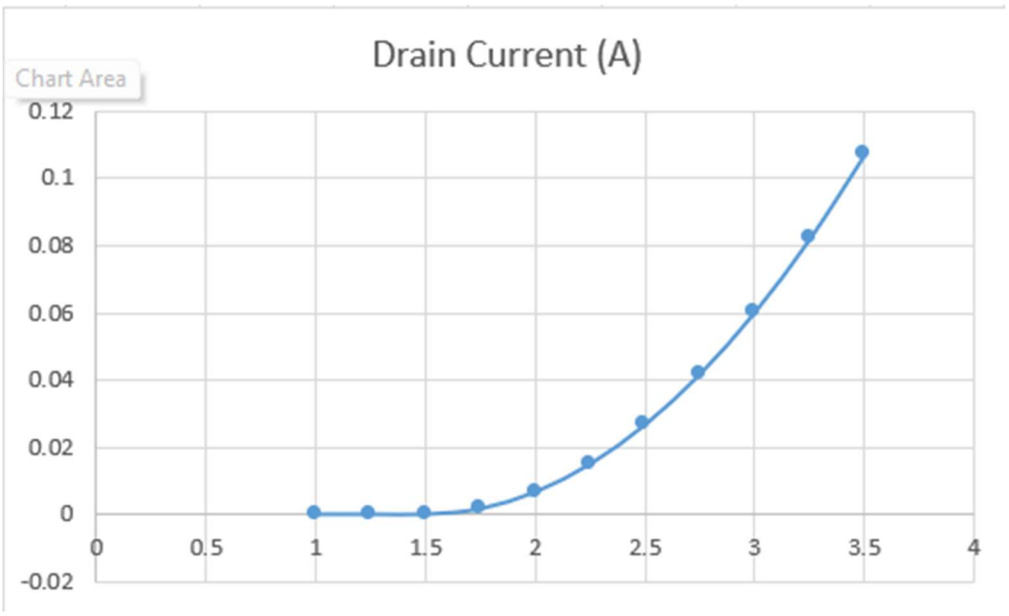
2. MOSFET transconductance parameter, Based on the value of drain current ID at VGS = 3.0V, and using the saturation model for the transistor, i.e., , extract the value of . Using your extracted values of VTN and kn, plot a curve of ID vs VGS, using the saturation model. Compare with your measured curve.

By reversing the equation we get :

Kn = (2Id)/(Vgs – Vtn)^2

After plugging in values we get Kn = 0.0536

Plotting Gate voltage vs Drain Current with the equation Id = ½ * Kn (Vgs-Vtn)^2



This closely matches out chart data but without the plateau which makes sense because the equation is parabolic not logarithmic.