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**MATRIC NO: 17/ENG04/057**

**DEPARTMENT: ELECTRICAL ELECTRONICS ENGINEERING**

**COURSE CODE : ENG 382**

**COURSE TITLE: ENGINEERING MATHEMATICS V**

commandwindow

clearvars

format short g

a = xlsread('wunmi','data1')

t=a(:,1)

v=a(:,2)

y=a(:,10)

N=length(t);

x=[ones(N,1) v(:)]

j=(x.'\*x)\(x.'\*t(:))

b=j(1)

c=j(2)

xa=min(v)

xb=max(v)

k=linspace(xa,xb,900)

f=(b.\*k)-c

plot(t,v,'-b')

hold on

grid on

grid minor

axis tight

% %linear

% linealizing eq 1

% -lnv/kp=+t\*(1/tp)-Td/tp

% y = 0.0006x - 0.5159 from excel

a = xlsread('wunmi','data1')

t=a(:,1);

v=a(:,2);

x0=ones(length(t),1)

x1=t

x=[x0 x1]

[kp tp td] = regress(v,x)

td=-0.5159

tp=0.0006

kp=0.9

v1=kp\*(1-exp(-((t-td)/tp)))

plot(t,v1,'o')