

**Faculty of Engineering and Technology**

**Department of Electrical and Computer Engineering**

**POWER SYSTEMS**

**ENEE4403**

**VOLTAGE PROFILE Assignments**

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**Section1**

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MATLAB code

C =0.01e-9

L= 0.0001

Zc =sqrt(L/C)

f=50

B = 2\*pi\*f\*sqrt(L\*C)

Vr=33;

x = 1000 : -0.05 : 0;

VNL = (cos (B\*x) + i\*sin (B\*x)/0.5)\*Vr;

plot(x, abs(VNL),'color','c','LineWidth',3)

hold on

Vsurg = (cos (B\*x) + i\*sin (B\*x)/1)\* Vr;

plot (x, abs(Vsurg),'color','g','LineWidth',3)

hold on

VFL = (cos (B\*x) + i\*sin (B\*x)/1.25)\*Vr;

plot(x, abs(VFL),'color','b','LineWidth',3)

hold on

VSC = (cos (B\*x) + i\*sin (B\*x)/9e10)\*Vr;

plot(x, abs(VSC),'color','r','LineWidth',3)

grid on

title ('Voltage profiles of lossless line with fixed sending end voltage ')

xlabel (' the Distance from sending end to reciving end in km')

legend('No load','Surge impedance','Full load','Short circuit')

ylabel ('The voltage at Sending end in kv ')

