

**Faculty of Engineering & Technology – Electrical & Computer Engineering Department**

**Second Semester 2021 – 2022**

Communication Laboratory ENEE4113

***Experiment 2 - Prelab***

**Name: Ahmaide Al-Awawdah.**

**ID: 1190823**

**Section: 9**

**Instructor: Dr. Ashraf Al-Rimawi**

**TA: Eng. Ruba Eid**

**Date: 1st April 2022**

***m(t) =*** $\cos((2π1500t))$***, c(t) = 4***$ \cos((2π100000t))$

* ***SSB-SC modulated signal = Ac m(t) cos (ωc t) – Ac mh(t) sin (ωc t)***

***mh(t) =*** $\cos((2π1500t + \frac{π}{2}))$***,***

* The figure below shows the plotted signal using MATLAB software.



### Figure 1: SSB-SC modulated signal

**The code**

Am = 1;

fm = 1500;

Ac = 4;

Fc = 100000;

t=-0.0001:0.00000001:0.0001;

m = Am.\*cos(2\*pi\*fm\*t);

d90 = pi.\*0.5;

M\_shift = Am.\*cos(2\*pi\*fm\*t + d90);

s = Ac.\*m.\*cos(2\*pi\*Fc\*t) - Ac.\*M\_shift.\*sin(2\*pi\*Fc\*t);

plot(t, s,'-');

axis([-0.0001, 0.0001, -5, 5]);

xlabel("Time"), ylabel("Signal");

title("SSB-SC modulated Signal");

**The block diagram**



### Figure 2: SSB-SC modulated signal block diagram