ECE 3113 Introduction to RF Circuit Design
Homework 3

Due:   Friday, September 14, 2019.

Reading:  Chapter 3, study Section 3.4.5 (pp. 131-133).

Note:  For some of the problems you may rely on MATLAB or Mathcad.

Important: For the problems that require Smith Chart computations, print out Smith Charts, plot/label the relevant points on them, and include them as part of your submission. You may also verify your graphical computation results analytically.

1. Page 138, Problem 3.5.
2. Page 139, Problem 3.9.
4. Page 139, Problem 3.11.
5. The following circuit is operated at 1000 MHz. Step through this circuit starting from the load and identifying $Z_L$, $Z_A$ and $Z_{in}$ on the 50 $\Omega$ ZY-Smith Chart. Comment on how this computation can be carried out graphically on the Smith Chart.

\[ L_1 = 5 \text{ nH} \]
\[ C_1 = 3 \text{ pF} \]
\[ Z_L = (30 + j20) \Omega \]