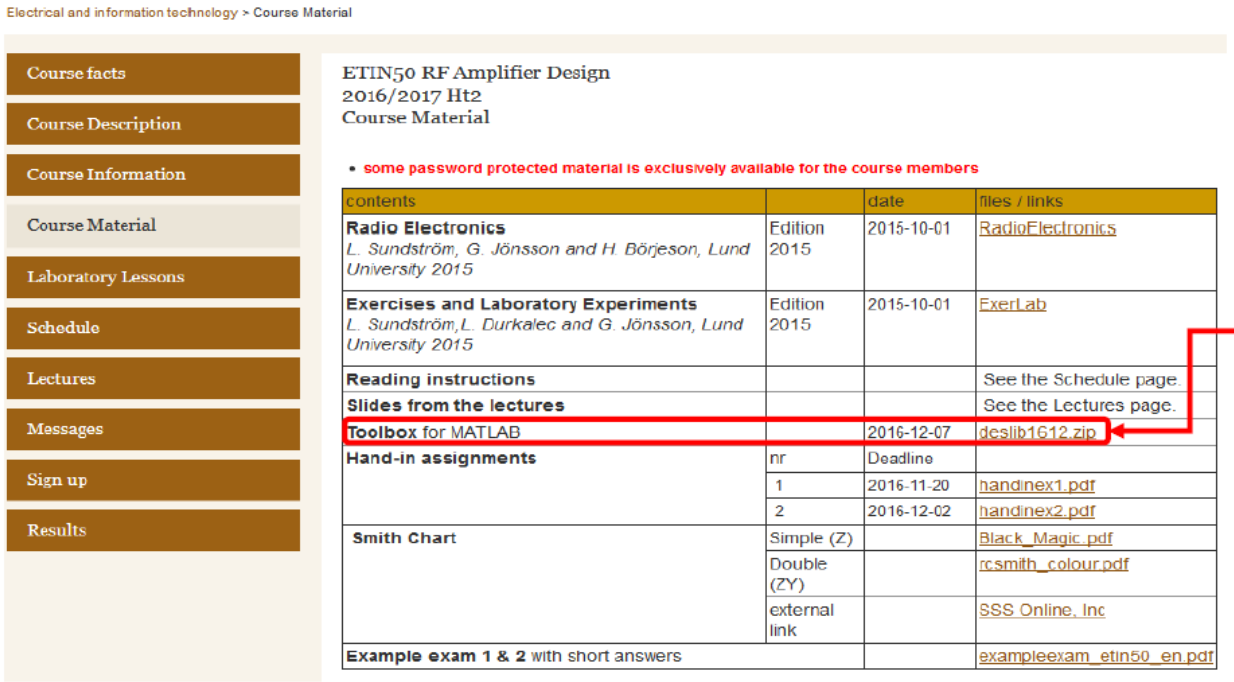
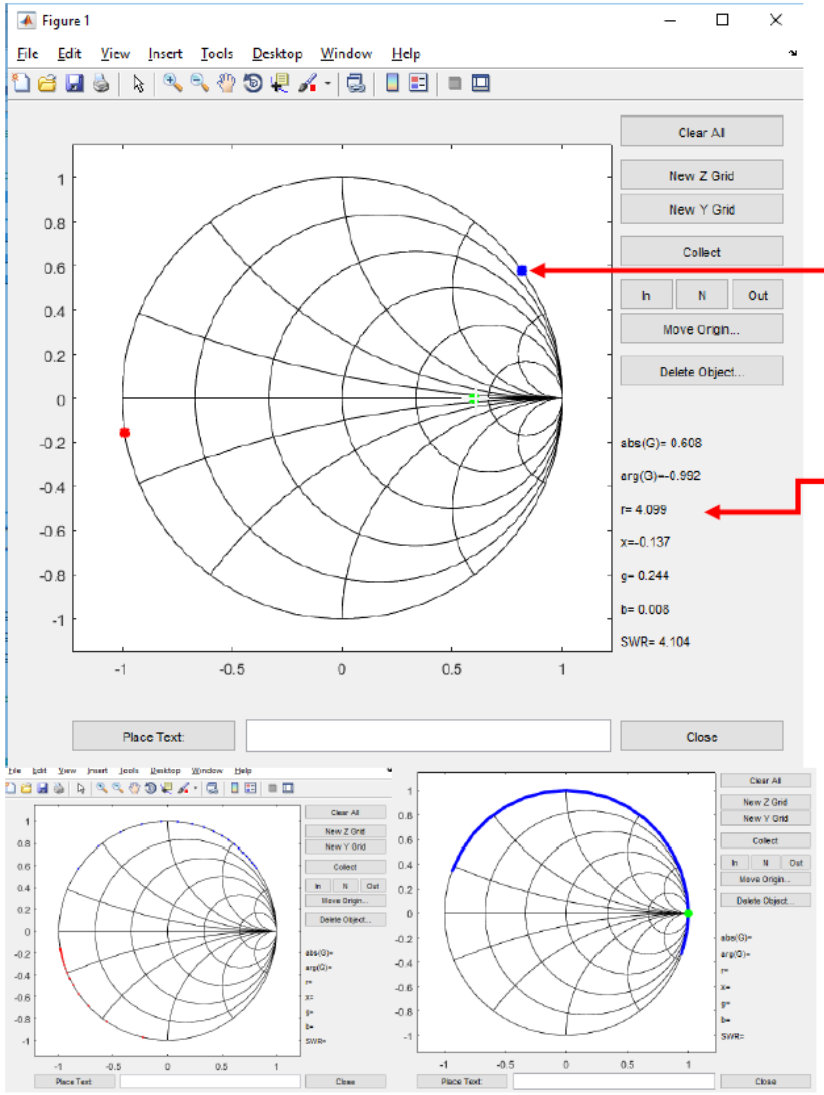
Deslib Matlab Library

- Install Matlab
- Download from the course webpage



Unzip the package at a location of your choise

Demo Files



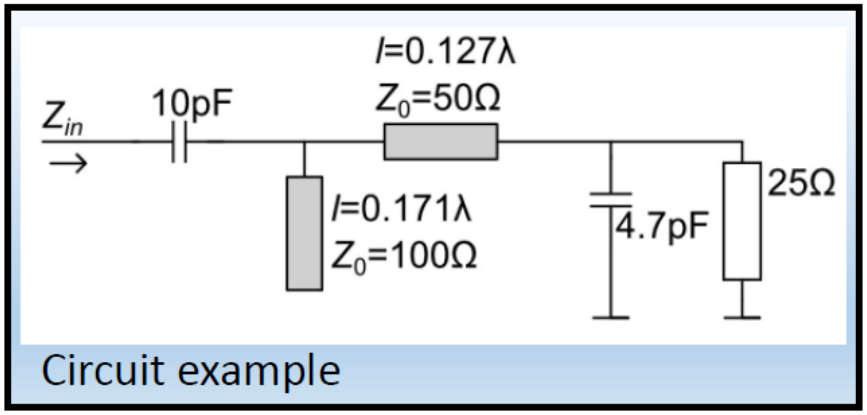
1. Run the demo file
2. Learn how deslib works
3. Start with the hand-in

Demo 1: Displaying R, L and C in the Smith chart.
Plot the impedance (good practice)
Read normalized values

Demo 2: Plot L and C versus frequency in the Smith chart

Demo 3: Frequency behavior of a stub

Circuit Example

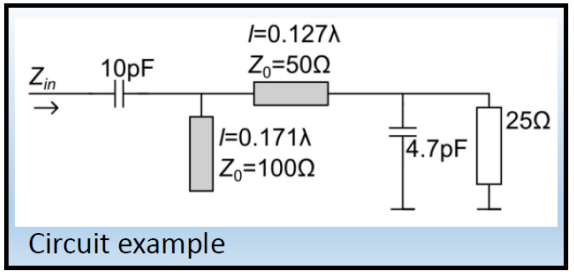


Circuit example

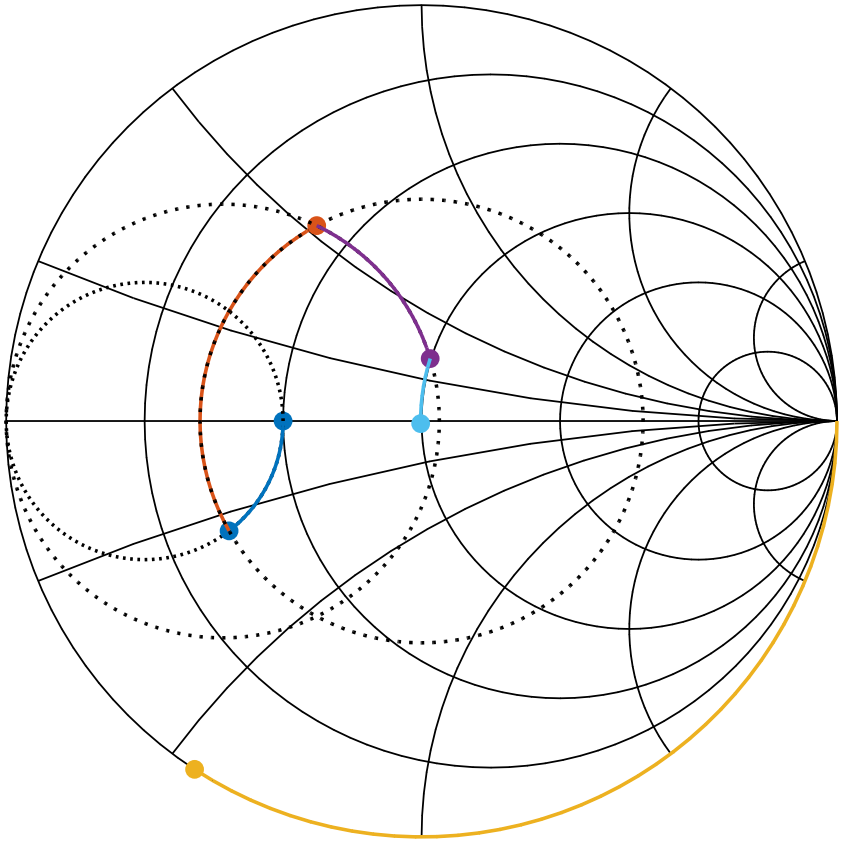
1. Do the matching on paper for *f*=1GHz
2. Implement the network in matlab using deslib
3. Verify the results
4. Add a frequency vector
5. Plot the mismatch loss

Circuit Example: Solution

1. Transform ZL to reflection factor
   GL=[z2g(ZL,Z01),f];
2. connect capacitance in series
   G1=parc(GL,C1,Z01);
3. Calculate transmission line in series.
   G2=serline(G1,l1,f);
4. Calculate the reflection of the open parallel stub
   Gstub=serline(Gopen,l2,f);
5. Renormalize the reflection coefficient of the stub to 50 Ohm
   Gstub50=renorm(Gstub,Z02,Z01);
6. connect the stub and the other calculated parts in parallel
   G3=parg(G2,Gstub50);
7. Add series capactitance
   Gin=serc(G3,C2,Z01);
8. convert the result to an impedance
   Zin=g2z(Gin,Z01);



Circuit example



Deslib Quick Reference

Command	Description
z2g	Convert impedance to reflection
g2z	Convert reflection to impedance
serline	Connect series transmission line
serl	Connect series inductor
serc	Connect series capacitor
serr	Connect series resistor
parl	Connect parallel inductor
parc	Connect parallel capacitor
parr	Connect parallel resistor
parg	Connect two circuits with known reflection coefficient in parallel
renorm	Renormalize reflection coefficient to new characteristic impedance

For information about the commands type `help command` in the matlab commandline