# ENSC220
AM-Radio Lab

The basic schematic we'll use for the AM radio is shown in Circuit-1. The input section (left) consists of your inductor and a variable capacitor in parallel connection. One side of this circuit is connected to earth ground and the other side connected to an external antenna long-wire. An antenna connection has been arranged in the SUNNY-Room (lab-1 lounge). The instructional staff will supply the variable capacitor, power supply and amplified speaker during the demo phase.

Circuit Assembly:

Examine the schematic diagram and use the techniques described in the Breadboarding #3 tutorial[1] to develop a hand-drawn, fully annotated 'construction' schematic drawing and to build the circuit on your breadboard. Carefully observe the prescribed wiring techniques and wire colours. Exact resistor values aren't critical for this circuit, but should be within the ranges indicated; or ±25% (~values). Just use the nearest available resistor values from the resistor cabinet or choose from those that you've collected. The two **Ra** resistors should be of equal marked value. Mark the selected *nominal*[2] values on your schematic. Assemble the circuit neatly with short, direct wiring interconnections that will allow for easy debugging. Double check the wiring after assembling the circuit. Note, this circuit requires just a single 12V supply.
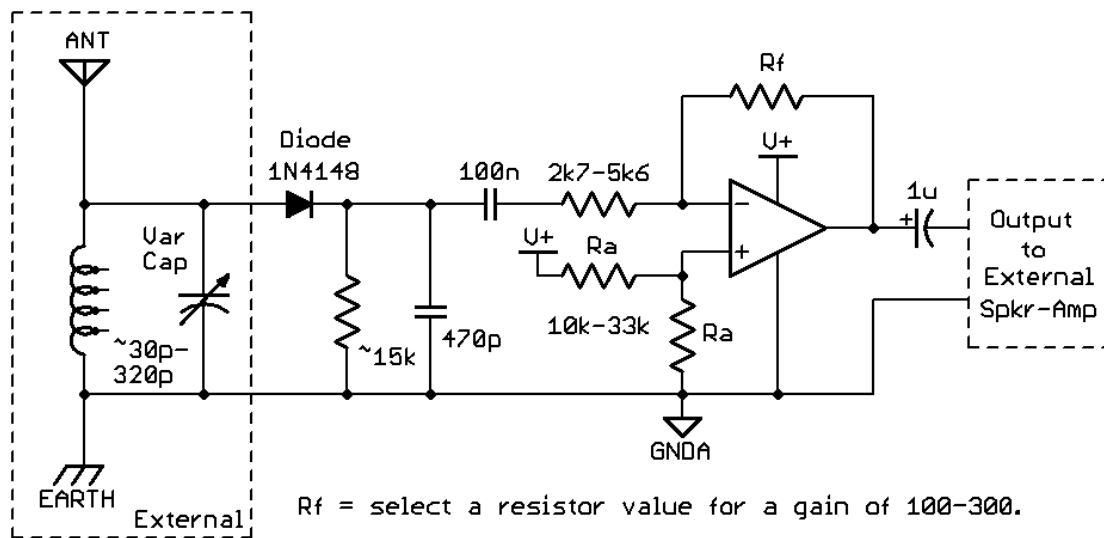
Circuit-1: Schematic of a simple AM Radio

Testing:

To test the functionality of your circuit assembly, the TA/instructor has access to a test board that contains the variable capacitor. You must bring your complete circuit schematic, inductor and tool set to the demo location. Your work will be appraised by the instructional team member who will assist you in connecting the ground, external antenna and power. Time permitting, some debugging suggestions may be offered if needed. By choosing appropriate taps from the inductor and adjusting the variable capacitor you should be able to receive at least a few AM broadcast stations.

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[1]   Lab1 computers desktop > Reference Material > Course Specific > ENSC220
[2]   *Nominal* refers to the factory imprinted value on the part