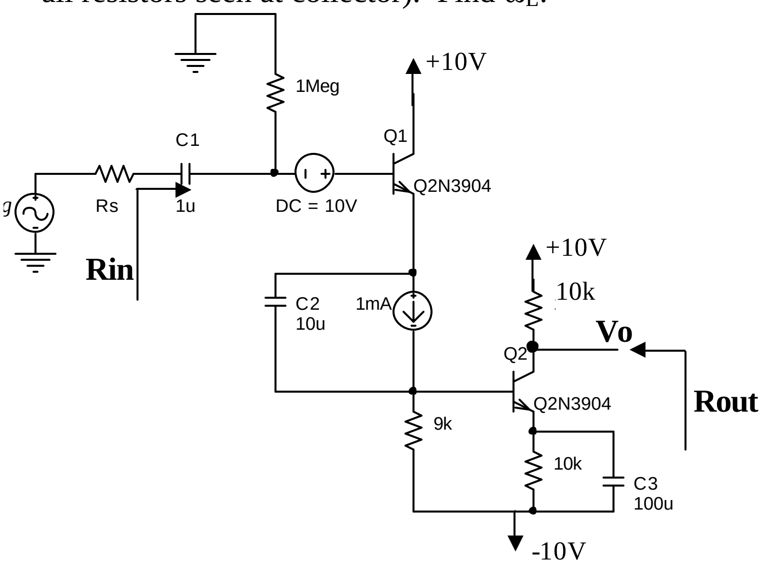
ıe material we have covered so far this semester is summarized (but NOT limited to) below:

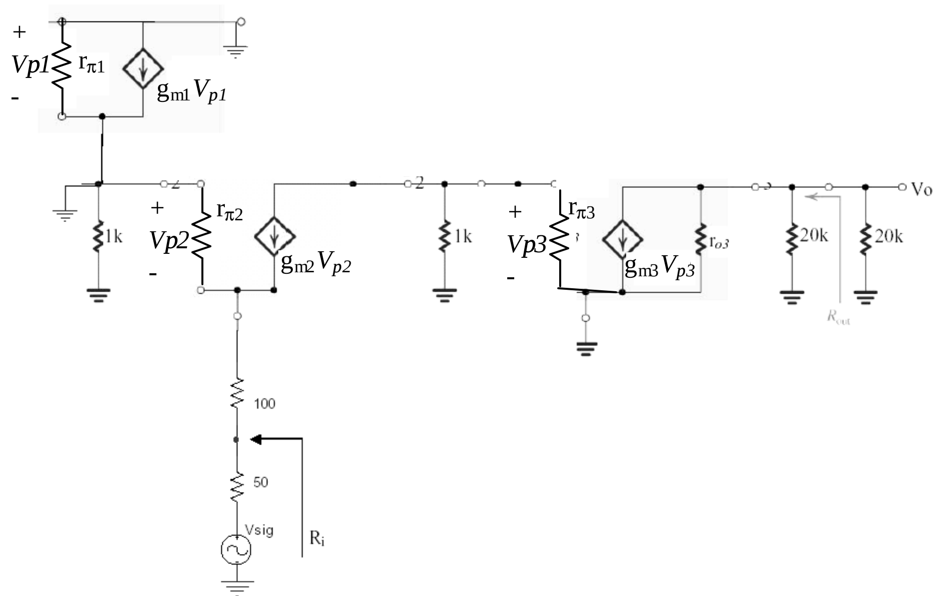
Understand the basic operation of a BJT:
Cutoff, saturation, active. Analyze a circuit for all current equations and voltages (current relationships)
- o Make sure to be able to take a Thevenin Equivalence and use Resistance Reflection Rules.

Understand the bias point concept for linear amplification.
Be able to separate the DC and AC analysis for a circuit containing a BJT.
Be able to analyze a circuit (with or without cap in it) containing a BJT for DC operation.
Be able to draw a small-signal model of a BJT circuit.
Analyze a small-signal circuit to find overall gain, midband gain, input resistance, and output resistan
Determine ω_L or f_L.

Use $|V_{BE}|=0.7$, $\beta=100$, ignore r_o.
The 0.25A current source is not ideal and may have a voltage drop across it.
(a) Solve the circuit for the **DC** values. (assume capacitors act as open). Find all currents and voltages
(b) Solve the circuit for midband gain, Vo/v_{sig}, Rin(ignore Rs), and Rout(include all resistors seen at collector). Find ω_L.



Use |V_{BE}| 0.7, β 100. Use g_{m1} 1mA/V, g_{m2} 2mA/V, g_{m3} 4mA/V, r_{o3} 100k. Find Vo/Vsig, Rout(ignore
0k on the right), Rin(ignore 50 from signal source).



Draw the small-signal equivalent circuit. Find Rin(ignore input signal) and Rout(include everything at nitter node) in symbolic form.