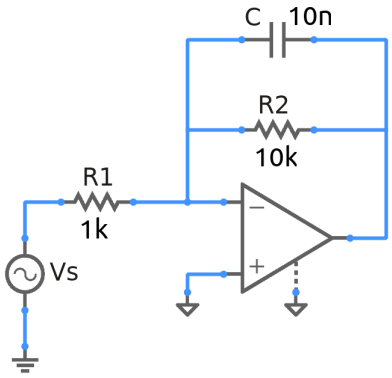
`ee101_op_filter_1.sqproj`



Exercise Set

For the low-pass active filter is shown in the figure,

1. Find the transfer function.
2. From the transfer function, find the low-frequency gain and the cut-off frequency f_0.
3. Find the low-frequency gain directly using the fact that $Z_C \to \infty$ as $f \to 0$.
4. What will happen to the magnitude frequency response of the filter if R_2 is changed to $20\,\mathrm{k}\Omega$?
5. What will happen to the magnitude frequency response of the filter if C is changed to $100\,\mathrm{n}F$?
6. Check your answers against simulation.