

1. Please follow the Sentaurus tutorial:

<http://www.engr.sjsu.edu/~dparent/ICGROUP/sentaurus.pdf>

Note, on page 9 of this tutorial it tells you to do all the Synopsys tutorials. At this time only do #1 the tool overview. Then proceed with pages 10-73.

2. Recreate Figure 22 on page 37 of the text.

3. What is the bandgap of Si at 750°C

4. What is the bandgap of GaAs at 750°C

5. Recreate Figure 28 for Si and a doping level of  $N_D=5 \times 10^{16} \text{ cm}^{-3}$ .