EE121B Spring Week 6
Ideal MOS Band Diagram (I) and Charge Distribution

+ 5 Modes (In the reader, 4 modes excluding weak inversion)
+ Carrier Screening
+ $Q_s \text{ v.s. } \psi_s$

Ideal MOS means
1. zero resistance gate
2. homogeneous oxide
3. no oxide/interface charge/traps
4. uniformly doped semiconductor
5. deep semiconductor always quasi-neutral
6. no 2-d effect
7. no leakage through oxide
8. no work function difference between metal and semiconductor*

MOS Band Diagram