

## ECE 576 Qualls Topics

Basic Si properties- Doping, Fermi Level, Quasi Fermi Levels, Mobility  
p-n junction- built in potential, reverse bias leakage current, I-V characteristics, diffusion capacitance

Three terminal MOS capacitor, depletion, accumulation and inversion. C-V characteristics.

GIDL and DIBL

Understanding of basic long channel MOSFET operation and I-V characteristics.

Basic understanding of short channel effects and their cause

Device scaling- what and how various parameters scale.