

ENEE 303H Fall 2013
Topics for the final exam.

1. CMOS inverter
 - a. Input-output characteristics
 - b. Transistor states and sizing
2. NMOS and NPN current mirrors
 - a. Biasing
 - b. Small signal equivalent
 - c. Transient response, C loaded
3. Small signal parameters from series expansion about Q point
4. Using new law $i_D=f(v_{GS}, v_{DS})$ in inverter and small signal
5. Y parameters and meaning
6. Load line and biasing
7. Input/output for logic gates
8. Voltage and current transfer functions; poles and zeroes
9. **OTA (= [differential] operational transconductance amplifier=VCCS) & its gm.**