E4332: VLSI Design Laboratory

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Evaluating a technology

- Specs like $f_T$ given with the technology
  - But measured at max. $V_{GS}$, $V_{DS}$ etc.

- But need to estimate performance under different conditions.
  - V-I characteristics
  - Loaded ring oscillator speed
  - Differential pairseloaded
  - Current mirrors
Evaluating a technology

- DC characteristics, $V_{GS}$ for a given current drive, drain conductance etc.

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Evaluating a technology

- Loaded ring oscillator speed
  - Gate delay, logic speed etc.
Evaluating a technology

- Current mirror: $f_T$, $g_m$, $g_{ds}$ under realistic bias
- Differential pairs: amplifier performance