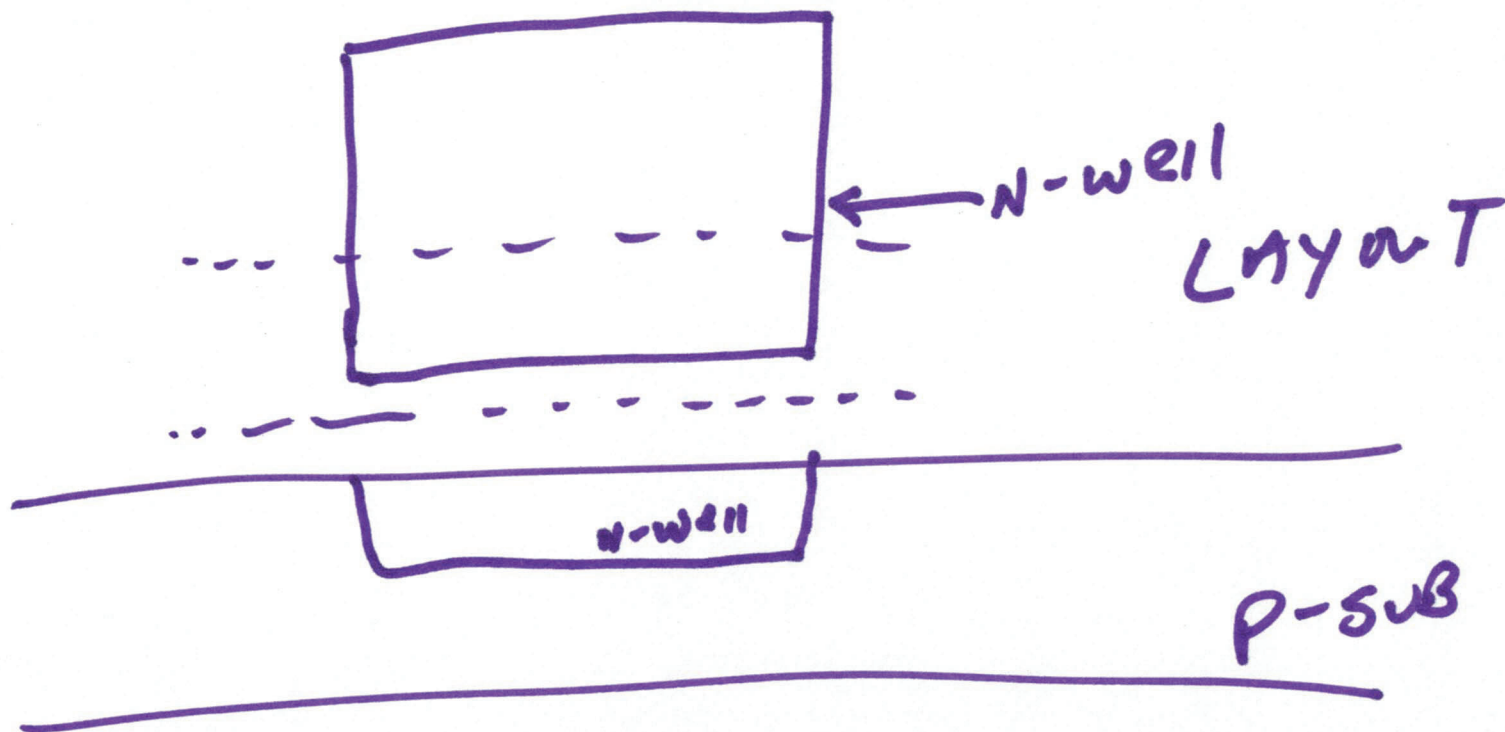


EE 421 / ECG 621

Digital IC Design

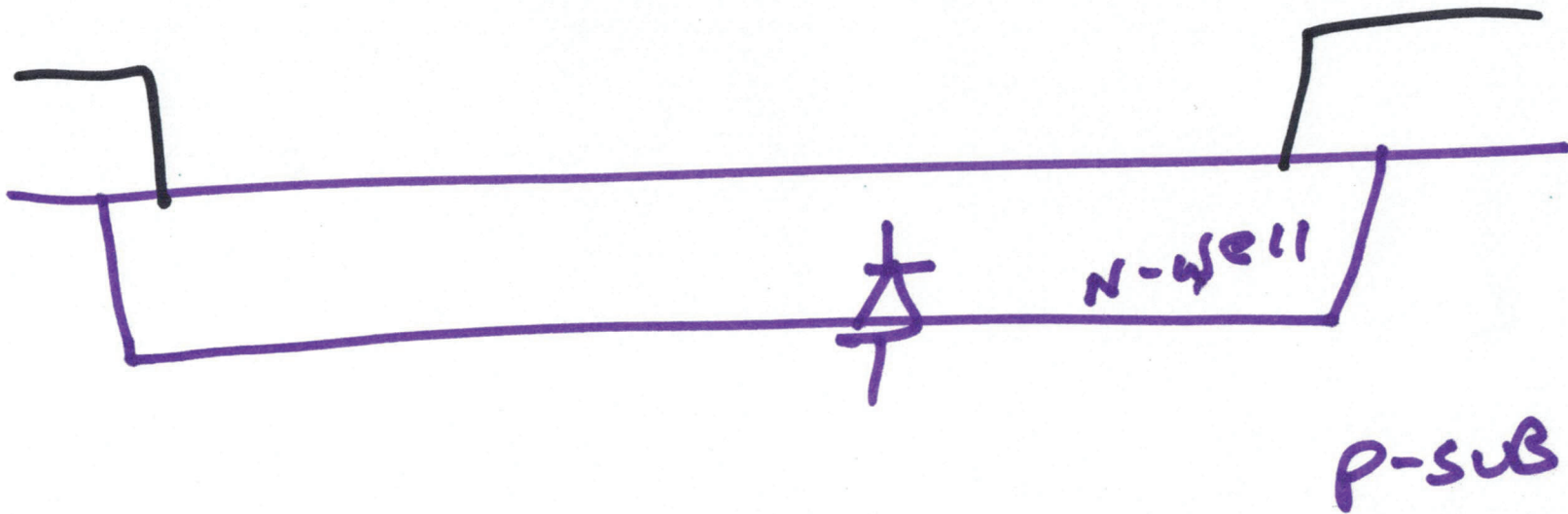
August 25, 2021

Lecture 2

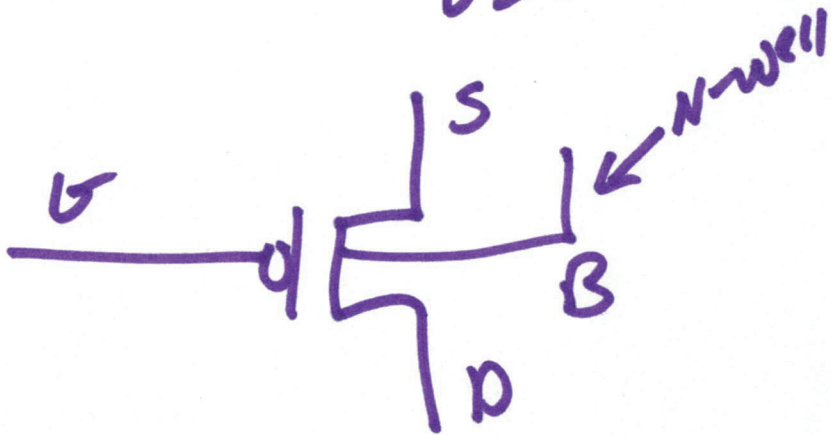


1)

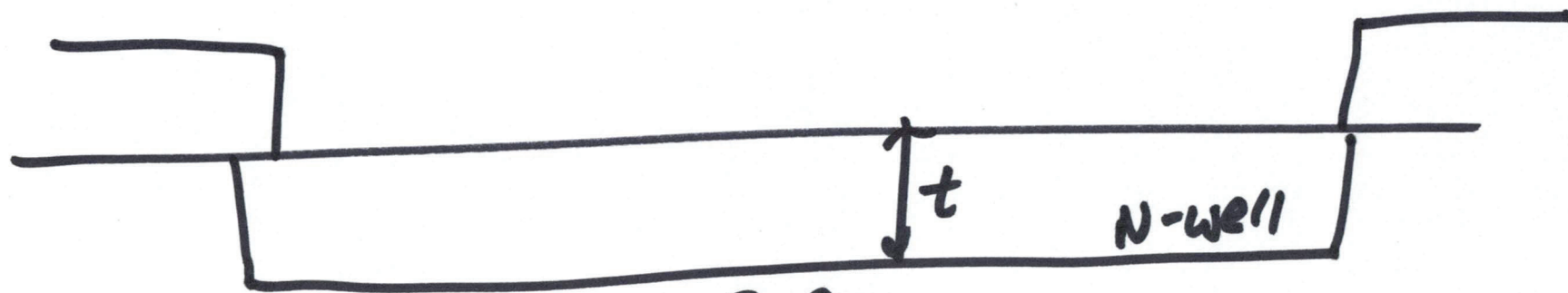
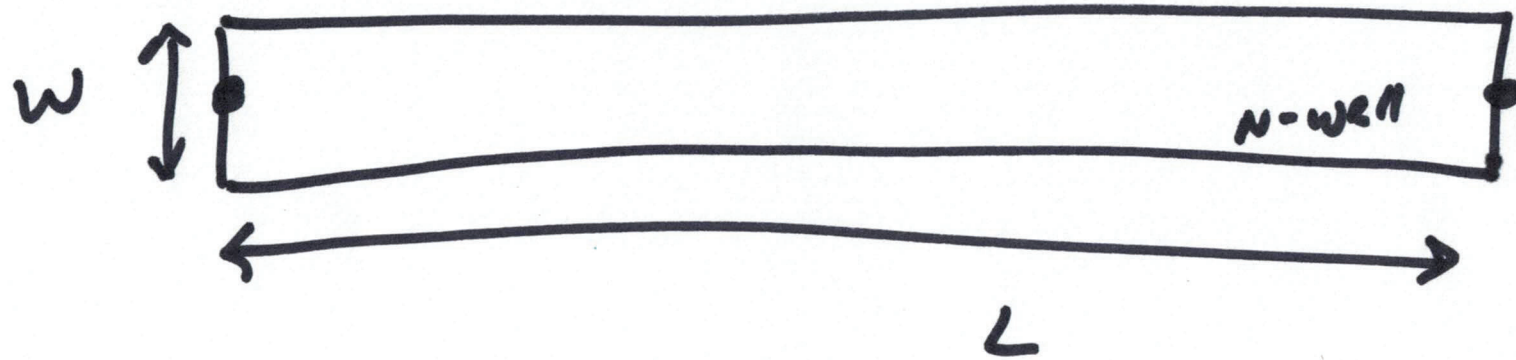
N-well



uses of an N-well



- 1) Resistor
- 2) Diode
- 3) Body of the pmos



$\rho \cdot a$
 \swarrow

$$R = \frac{\rho}{t} \cdot \frac{L}{w}$$

$R_0 \rightarrow \frac{\rho}{\square}$

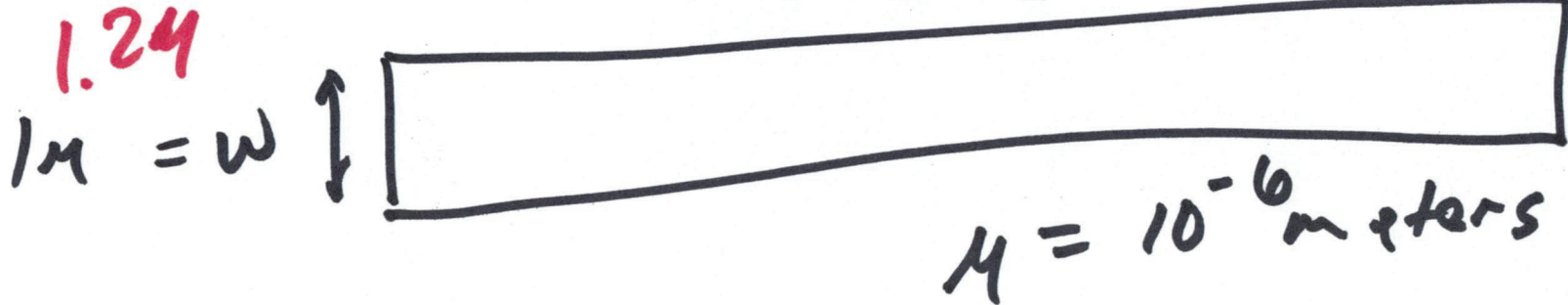
3)

LAYOUT AN 8k N-well
 Assume $R_{D, nwell} = 800 \Omega$ Resistor

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$$R = R_D \cdot \frac{L}{W} = 800 \cdot 10 = 8k$$

$$10 \mu = L = 8 \cdot W$$



$\lambda = \frac{1}{2} \mu$ ← grid

scalable CMOS Design Rules