# EE4981

## Test 2

## 1 side - 8 ½ x 11 note sheet

# Constants

$$\varepsilon_o = 8.854 \times 10^{-12} \text{F/m}$$
$$\varepsilon_{ox} = 3.9$$
$$T_{ox} = 5\text{nm}$$

# Model Parameters

$$V_{Tn} = 0.4\text{v} \qquad V_{Tp} = -0.4\text{v}$$
$$\mu_n = 200\text{cm}^2/\text{V-s} \qquad \mu_p = 100\text{cm}^2/\text{V-s}$$
$$\lambda_n = 125 \qquad \lambda_p = 125$$

# ABC layout of diff pair

A   B

B   A

$g_m$ calculations
Gain calculations
Differential Pair design
Small signal model
DACs
ADCs
Analog Layout