

## **EE4280 Analog Integrated Circuits Analysis and Design II**

### **1. Course Description:**

This introductory course will cover the analysis and design of analog/mixed-signal integrated circuits for digital systems and for digital communications.

### **2. Prerequisite:**

Electric Circuits, Electronics, Analog Integrated Circuits Analysis and Design I

### **3. Text books:**

*Design of Analog CMOS Integrated Circuits*, B. Razavi, McGraw Hill, 2001.

*Analog Integrated Circuit Design*, D. Johns and K. Martin, Wiley, 1997.

### **4. References:**

*Fundamentals of Microelectronics*, B. Razavi, Wiley, 2008

*Analysis and Design of Analog Integrated Circuits*, P. R. Gray, P. J. Hurst, S. H. Lewis, and R. G. Meyer, Wiley, 2001

### **5. Teaching Method:**

Lecture: 3 hours

Outside study: 4 hours

### **6. Evaluation:**

Homework: 40% (no late homework)

Midterm: 30%

Final: 30%

\* Calculators are allowed in all examinations

**7. Class Webpage:** NTHU e-learning system (<http://lms.nthu.edu.tw>)

### **8. Instructor:**

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### **9. Syllabus:**

- \* Noise
- \* Nonlinearity and Mismatch
- \* Oscillators
- \* Basic phase-locked loops
- \* Charge-pump phase-locked loops
- \* Switches
- \* Switched-capacitor circuits