

# **ECE4752 Course Syllabus**

## **ECE4752**

### **Integrated Circuit Fabrication (2-3-3)**

#### **Prerequisites**

ECE 3030 [min C] or ECE 3040 [min C] or ECE 3710

#### **Corequisites**

None

#### **Catalog Description**

The objective of this course is to give students exposure to the various steps involved in the fabrication of integrated circuits and devices. The course will include a laboratory segment in which students fabricate MOS transistors, diffused resistors and MOS capacitors from a bare silicon substrate. Crosslisted with CHE 4752.

#### **Textbook(s)**

May and Sze, *Fundamentals of Semiconductor Fabrication*, Wiley, 2003. ISBN 9780471232797 (required)

#### **Topical Outline**

1. Overview of Silicon Processing
2. Crystal Growth and Doping
3. Substrate Characterization
4. Oxidation
5. Photolithography
6. Etching
7. Diffusion
8. Ion Implantation
9. Metallization
10. Epitaxial Growth and CVD
11. SUPREM Simulation
12. Device Characterization and Measurement
13. CMOS Process Integration
14. Bonding and Packaging
15. Yield