Course Information
(1) Title: ECE541/ME541 Microelectronic Fabrication Techniques (CRN 20209/22184 and 4 credits)
(2) Schedule: 4:00 pm~5:15 pm, Monday and Wednesday (January 12th - May 1st, 2015)
(3) Location: Taft Hall 204.
(4) Instructor: Dr. Zheng Yang (Email: yangzhen@uic.edu; Phone: 312-996-8367; Office: ERF3017)
(5) Materials: Lecture slides & notes posted in Blackboard or/and on course website.

Prerequisite ECE 347 or ECE 449 or instructor’s consent.

Course Resources
(1) Website: http://www.ece.uic.edu/~zyang/Teaching/20142015SpringECE541/index.html.
(2) UIC Blackboard system.

Office Hours
(1) Regular office hours: 2 pm ~ 3:15 pm, Monday and Wednesday (January 12th - May 1st, 2015).
(2) Additional office hours: Please send your requests via emails ahead to make appointments. It is recommended to send the email requests 1-2 weeks in advance to guarantee a time slot.

Reference books
• R. C. Jaeger, Introduction to Microelectronic Fabrication, Prentice Hall.
• J. D. Plummer, M. D. Deal, P. B. Griffin, Silicon VLSI Technology: Fundamentals, Practice, and Modeling, Prentice Hall.

Grading The grading of this course is based on exams (30%×3=90%) and quizzes (10%).
Quizzes 10%
Exams 90%  (30%×3; the lowest score of 4 exams is dropped; the other 3 exams 30% each)

Unless otherwise noted, a straight scale is used to determine the grades with A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 0-59%.

Exams Four exams (three one-hour exams and the final exam) will be given for this course. The lowest exam score will be dropped. The dates for the exams will be posted on the course website and announced during the class. Exams will be based on contents covered in lectures. NO MAKEUP EXAMS will be given!

Quizzes will be given in class on a random basis. Quizzes will be based on contents covered in recent lectures. NO MAKEUP QUIZZEZ will be given!

Course Descriptions This is a graduate level class focusing on microelectronic fabrications. This course emphasizes more on practical skills than theoretical principles. The main topics of this course cover fundamentals of semiconductor materials and devices, cleanroom basics, Si wafers, oxidation, photo-lithography, e-beam lithography, wet etching, dry etching, physical vapor deposition, chemical
vapor deposition, atomic layer deposition, molecular-beam epitaxy, diffusion, ion implantation, interconnect, packaging, metrology, optical & electron microscopy, and microelectronic device characterizations; with particular effort on introducing and explaining standard Si MOSFET fabrication process.

**Professional and Ethical Responsibility**

- Attend all lectures. Take exams on scheduled dates. No make-up exams or alternate arrangements will be allowed unless for reasons beyond a student’s control (supporting documents required).
- Read announcements on course website and Blackboard, as well as emails from the instructor and teaching assistants regularly.
- Review lecture slides and notes posted.
- Policy on cheating and plagiarism: Dishonest actions by students will result in appropriate disciplinary action. Intentional use or attempt to use unauthorized assistance, materials, or information, in any quiz, examination, or assignment and plagiarism in literature review report may lead to penalties such as a failing grade. College of Engineering and University guidelines will be followed. Generally, the minimum penalty for cheating is an E in the course; the maximum penalty is expulsion from the university. Giving aid on exams to others is also considered as a form of cheating.

**Regulations for Religious Holidays**

Students who wish to observe their religious holidays shall notify the instructor by the tenth day (i.e., 01/23/2014) of the semester of the date(s) when they will be absent unless the religious holiday is observed on or before the tenth day of the semester. In such cases, the students shall notify the instructor at least five days in advance of the date when he/she will be absent.

**Policy on Incomplete (IN) Grades**

The UIC policy is that Incomplete (IN) grades should be given ONLY when the student is making satisfactory progress. Please see the current Undergraduate Catalog for a precise statement. In this course, any student looking for an IN grade needs to have a C average at the time he/she requests for an IN. If the student is earning a D or below, then and IN grade will not be given, regardless of other circumstances. Note that satisfactory progress is a necessary but not sufficient condition for an IN. There must also be an extraordinary reason why the instructor should consider giving an IN.