Syllabus for
ECSE 6300 - Integrated Circuit Fabrication Laboratory

Catalog Description:
Theory and practice of IC fabrication in a research laboratory environment. Test chips are fabricated and the resulting devices and circuits evaluated. Processes and fabrication equipment studied and used include oxidation/diffusion, CVD reactors, photolithography, plasma etching, vacuum evaporator, ion implantation, etc. Instruments used in process monitoring and final testing include thin film profilometer, ellipsometer, resistivity probe, scanning electron microscope, capacitance-voltage system, etc. The fundamentals of hazardous material handling and clean room procedures are studied.

Prerequisite: ECSE 4250 or equivalent.

When Offered: Spring term annually.

Cross Listed: Cross listed as MTLE 6300. Students cannot receive credit for both this course and MTLE 6300.

Credit Hours: 3

Textbook: Optional (not required)

Computing
Students need access to a UNIX system. They will use telnet or other means to access the unix system operated by the ECSE Department to perform process numerical simulations. Course notes, homework, and other materials are available via FabLab homepage: http://www.ecse.rpi.edu/courses/S16/ECSE-6300/index.html

Format
Classes.................................15 weeks
Lectures/Laboratories..............10/15 sessions

Grading
Unit Quizzes.............................32%
Lab Participation....................20%
Final Project Report................32%
Homework..............................16%
Best Poster Competition.........Award

Course Coordinator: James J.-Q. Lu