Policies:

The GMU Honor Code applies to all aspects of the ECE 437 course and will be strictly enforced.

Students will work in groups of 2 to complete their processing experiments.

Attendance in all lab sessions is mandatory in order to pass the course.

Handheld devices like mobile phones; pages, etc will be turned off, when the lab session is in progress.

Students are expected to submit a comprehensive report on the lab sessions.

Additional weekly homework may be assigned as and when required.

At the end of the course, students will submit a fabrication related research paper assigned to them.

Attire:

In order to protect you from chemical spill, it is required of you to wear long pants and closed shoes. Shorts, skirts and sandals will not be allowed. Once you are in the lab, you are expected to wear lab coats and goggles at all times. When handling acids and bases, you will wear high wrist rubber gloves and a face shield.

Literature:

Lab manual – will be provided (required)

Reference:

Introduction to microelectronic fabrication - Richard C. Jaeger Addison Wesley Modular Series; v.5 (required)
Schedule/ syllabus:

*Due to malfunction of required systems and power outlet problems we couldn’t start the Lab on time. The lab will start from the first of December and the students will be working according to their convenience.

Session 1: Introduction to the ‘fabrication’ laboratory, equipment and chemicals to be used, discussion of potential hazards, wafer cleaning.

Session 2: Level 0 Mask Patterning – Alignment marks formation

Session 3: Level 1 Mask Patterning – Opening windows for diffusion.

Session 4: Diffusion

Session 6: Backside Doping

Session 7: Level 2 Mask Patterning -- Surface passivation

Session 8: Level 3 Mask Patterning – Contact Metal Deposition

Session 9: Level 4 Mask Patterning – Gate Metal Deposition

Session 10: Characterization

Grading:

Lab performance: 35%

Lab Report: 35%

Individual Research Paper: 30%