PHYS 466: Advanced Experimental Physics
Part B: Thin Film Deposition and Characterization

Instructor: Hongtao Shi
April 3, 2005

Textbook for SEM

References
- See our course website for more references

Attendance
Lecture attendance is a must for the completion of the course. If you can not come in case of emergency, please inform the instructor in advance. You can either call me at 664-2013 or email me at hongtao.shi@sonoma.edu.

We will again form three groups with two or three students in each group. It is required each group present one of the outlined topics (See Lecture 3, 4, or 5). I will be covering the first two lectures and the last two. The presentation is about 40 minutes long. You need about 10 minutes for questions and discussions. Presentation is in Powerpoint.

Exams and Grading
Final grade for this part will be based on the following criteria:
1. Attendance: 10%
2. Lab report: 30%
3. Presentation: 30%
4. Final exam: 30%

Term grade will be based on your performance on this part as well as on Dr. Dunning’s part.
Objectives

- Get hands-on experience on thin film deposition via sputtering
- Provide an overview of thin film growth and characterization techniques
- Provide in-depth understanding of theory and principles of scanning electron microscopy (SEM), energy dispersion x-ray spectroscopy (EDX) and atomic force microscopy (AFM)
- Get acquainted with construction, controls and operation of SEM (Hitachi S-3000N), EDX (Oxford INCA 300), and AFM (Pacific Nanotechnology).