

PHYS 4340 / 5370 Materials Physics Lab (with MEMS) Spring 2008

Dr. Greg Spencer RFM 3212 512.245.0587 spencer@txstate.edu

Class Times:	1400—1515 T Th, 3 hrs of lecture per week, RFM 3219 + lab times outside regularly scheduled class to perform experiments / measurements.																			
Catalog Description:	A laboratory based course introducing a broad array of materials synthesis and characterization methods. The specific subjects will be coordinated with topics of current interest in the literature and will be chosen by mutual consent of the student and faculty advisor. The focus of this class will be micro electromechanical systems (MEMS).																			
Prerequisites:	PHYS 3411 (Advanced Physics Lab), PHYS 3416 (Applied Electronics), and PHYS 4311 (Condensed Matter Physics) or consent of instructor.																			
Goal:	The goal of this course is to introduce both experimental thin film fabrication and characterization techniques and MEMS concepts and devices that employ them.																			
Text:	<i>The Materials Science of Thin Films</i> , 2 nd edition by Milton Ohring, Academic Press, ISBN 0125249756. Library Catalog # TA418.9.T45 O47 1992. <i>Micro Electro Mechanical System Design</i> , by James Allen, CRC Press—Taylor & Francis, ISBN 0824758242. Library Catalog # TK153 .A47 2005 E-book.																			
Lab Manual:	Handouts & online PDF files will be provided for MEMS curricula and for various instruments.																			
Instructor:	Dr. Greg Spencer Office: RFM 3212 Office phone: 245-0587 E-mail: spencer@txstate.edu	Office hours: (subject to change) MWF 10:00 – 11:00 T Th 11:00 – 12:00 or by appointment (phone or email) Class Webpage: www.txstate.edu/~gs14/4340																		
Grades:	<p>Grades will be determined by a combination of exams and laboratory activities as outlined.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Exams (including final).....</td> <td style="width: 10%; text-align: center;">40%</td> <td style="width: 40%;">All exams will be equally weighted.</td> </tr> <tr> <td>Homework / Special Projects</td> <td style="text-align: center;">20%</td> <td></td> </tr> <tr> <td>Lab Notebook maintenance & Lab Project Participation.....</td> <td style="text-align: center;">20%</td> <td></td> </tr> <tr> <td>Lab Reports.....</td> <td style="text-align: center;">20%</td> <td></td> </tr> <tr> <td colspan="2" style="text-align: center;"><hr style="width: 20%; margin: 0 auto;"/></td> <td></td> </tr> <tr> <td colspan="3" style="text-align: center;">Total = 100%</td> </tr> </table> <p>[The Phys 4340 final exam is scheduled for Monday, May 5, from 0800—1030.]</p>		Exams (including final).....	40%	All exams will be equally weighted.	Homework / Special Projects	20%		Lab Notebook maintenance & Lab Project Participation.....	20%		Lab Reports.....	20%		<hr style="width: 20%; margin: 0 auto;"/>			Total = 100%		
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Attendance:	You are expected to attend class as well as planned lab times with proper preparation. If you know in advance of unavoidable absences, please communicate these with the instructor well in advance to mitigate the effect of them.																			
Class Behavior:	Students are expected to maintain themselves during class in a courteous, adult manner that promotes the learning process. To assist in this, please turn off cell phones and pagers, do not engage in extraneous conversations during class, and don't distract or disturb your classmates. ✗ Unruly, disrespectful, disruptive, or dishonest behavior will not be tolerated. Violators will be asked to stop or leave the room. Such behavior will affect your final grade.																			
Special Needs:	Students with special needs, as documented by the Office of Disability Services, should identify themselves at the beginning of the semester. Arrangements can be made to accommodate those needs as necessary.																			

Texas State University Honor Code

As members of a community dedicated to learning, inquiry, and creation, the students, faculty, and administration of our University live by the principles in this Honor Code. These principles require all members of this community to be conscientious, respectful, and honest.

WE ARE CONSCIENTIOUS. We complete our work on time and make every effort to do it right. We come to class and meetings prepared and are willing to demonstrate it. We hold ourselves to doing what is required, embrace rigor, and shun mediocrity, special requests, and excuses.

WE ARE RESPECTFUL. We act civilly toward one another, and we cooperate with each other. We will strive to create an environment in which people respect and listen to one another, speaking when appropriate, and permitting other people to participate and express their views.

WE ARE HONEST. We do our own work and are honest with one another in all matters. We understand how various acts of dishonesty, like plagiarizing, falsifying data, and giving or receiving assistance to which one is not entitled, conflict as much with academic achievement as with the values of honesty and integrity.

THE PLEDGE FOR STUDENTS

Students at our University recognize that, to insure honest conduct, more is needed than an expectation of academic honesty, and we therefore adopt the practice of affixing the following pledge of honesty to the work we submit for evaluation:

I pledge to uphold the principles of honesty and responsibility at our University.

THE PLEDGE FOR FACULTY AND ADMINISTRATION

Faculty at our University recognize that the students have rights when accused of academic dishonesty and will inform the accused of their rights of appeal laid out in the student handbook and inform them of the process that will take place.

I recognize students' rights and pledge to uphold the principles of honesty and responsibility at our University.

ADDRESSING ACTS OF DISHONESTY

Students accused of dishonest conduct may have their cases heard by the faculty member. The student may also appeal the faculty member's decision to the Honor Code Council. Students and faculty will have the option of having an advocate present to insure their rights. Possible actions that may be taken range from exoneration to expulsion.