

## MMAT 320-PW Thin Films and Coatings

Spring, 2006

Every Thursday, 5-8 pm; Pratt and Whitney, ETU-1

Instructor:

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Course Web Page:

<http://www.ims.uconn.edu/~bhuey/MMAT320.htm>

Required Textbook:

1) Materials Science of Thin Films-Deposition and Structure, 2<sup>nd</sup> edition  
by M. Ohring, Academic Press (2002).  
ISBN 0-12-524975-6

Goals: To introduce fundamental concepts for the deposition, characterization, optimization, and application of thin films and coatings.

Lab Projects:

None.

Date	Lecture	Topic	Reading	Remarks
1/18	1	Materials Science of Thin Films and Coatings	Ch 1	
1/25		<b>No Class</b>		
2/1	2	Mechanical Properties of films and coatings	Ch 12	Paper summary due
2/8	3	Vacuum Equipment	Ch 2	HW 1 due
2/15	4	Characterization Equipment	Ch 10	Paper summary due
2/22	5	Evaporation and Pulsed Laser Deposition	Ch 3	Paper summary due
3/1	6	Plasmas and Ions	Ch 4	HW2 due
3/8		<b>No Class: Spring Break</b>		Paper summary due
3/15	7	Physical Vapor Deposition and Sputtering	Ch 5	Paper summary due
3/22	8	Chemical Vapor Deposition	Ch 6	Paper summary due
3/29	9	Nucleation and Growth	Ch 7	HW3 due
4/5	10	Epitaxy	Ch 8	Paper summary due
4/12	11	Film Structure	Ch 9	Paper summary due
4/19	12	Reactions, and Transformations	Ch 11	HW4 due
4/26	13	Student Presentations		
5/3		Final Paper Deadline		

Also to be included: Spin Coating and Electrochemical Deposition          handout