Course	**MSEN/EEMF 6324: Electronic, Optical, and Magnetic Materials**
Professor	Chadwin D. Young
Term	Fall 2015
Meetings	Location: FO 3.222 Tuesdays & Thursdays: 2:30 PM – 3:45 PM

Professor's Contact Information

Office Phone	972-883-5770
Office Location	NSERL 4.404
Email Address	chadwin.young@utdallas.edu
Office Hours	By appointment
Other Information	Best contact is through email

General Course Information

Pre-requisites, Co-requisites, & other restrictions	MSEN 5300 or equivalent
Course Description	Foundations of materials properties for electronic, optical and magnetic applications. Electrical and thermal conduction, elementary quantum physics, modern theory of solids, semiconductors and devices, dielectrics, magnetic and optical materials properties.
Learning Outcomes	1. Ability to understand the Modern Theory of Solids including thermal and electrical conduction mechanisms. 2. Ability to estimate Materials Properties for: Semiconductor, Dielectric, Magnetic and Optical Materials. 3. Ability to estimate basic device operations.
Required Texts & Materials	*Principles of Electronic Materials and Devices, 3rd Ed.* by Safa Kasap (ISBN: 9780073104645)
Suggested Texts, Readings, & Materials	1. Will be suggested at various times during the semester

Class Calendar

[Dates and Topics are subject to change]

Class Day	Lecture Topics	Reading
August		
25	Elementary Concepts	1.1-1.13
27	Elementary Concepts	1.1-1.13
September		
1	Conduction	2.1-2.5
3	Conduction	2.1-2.5
8	Conduction	2.6-2.9
10	Conduction	2.6-2.9
15	Quantum Physics	3.1-3.10
17	***Exam #1***	
22	Quantum Physics	3.1-3.10
24	Theory of Solids	4.1, 4.2, 4.11
29	Theory of Solids	4.1, 4.2, 4.11
October		
1	Theory of Solids	4.4-4.10
6	Theory of Solids	4.4-4.10
8	Semiconductors	4.3, 5.1-5.12
15	Semiconductors	4.3, 5.1-5.12
17	***Exam #2***	
22	Devices	6.1-6.9
24	Devices	6.1-6.9
30	Dielectric Materials	7.1-7.9
November		
3	Magnetic Materials	8.1-8.13
5	Magnetic Materials	8.1-8.13
10	Optical Materials	9.1-9.8
12	***Exam #3***	
17	Optical Materials	9.1-9.8
19	Optical Materials	9.9-9.18
24	Thanksgiving Break	
26	Thanksgiving Break	
December		
1	Optical Materials	9.9-9.18
3	Review/Recap	
8		
???	***Final***	

Course Policies

Grading (credit) Criteria	20% Assigned Homework 60% Exams 20% Final Exam **Class will be based on a points system where point total is TBD. This allows a student to readily track his/her progress in the course.**
Make-up Exams	No make-up exams will be offered.
Extra Credit	No extra credit will be given
Late Work	No late work will be accepted.
Re-grade Policy	If there are any problems with the grading of assignments, quizzes, or exams, students should submit the paper along with a written statement describing the points in question. Papers submitted more than 2 weeks after grading is finished will not be considered.
Class Attendance	**Mandatory.** Random in-class quizzes will be given to ensure attendance where the overall average of the in-class quizzes can replace an exam.
Classroom Citizenship	No attendance: no credit, if in-class quiz is given. (See above) Use of mobile/cellular phone, laptops, or other electronic devices or equipment is not allowed during class. All such systems must be turned off or silenced and not used during classes without prior permission from the instructor.
UT Dallas Syllabus Policies and Procedures	*The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.* *Please go to http://go.utdallas.edu/syllabus-policies for these policies.*

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.