

Course number and name: MTSE: 4070 Electronic Materials

Credits and contact hours: 3 Credits. Tuesday (10:30-11:30am). Other times available on request via e-mail.

Instructor's or course coordinator's name: Dr. Mohamed El Bouanani

Text book, title, author, and year

Principles of Electronic Materials and Devices, 3ed Edition by S.O.Kasap, ISBN: 0-07-295791-3

The Instructor will supply complementary handouts.

a. Other supplemental materials

Electronic Properties of Materials, by Rolf E. Hummel (4th Edition, Springer, New York, 2000)

Microchip manufacturing, by S. Wolf, ISBN: 0-9616721-8-8

Specific Course Information

a. Brief description of the content of the course (catalog description)

Intensive study of electronic, optical and magnetic properties of materials with an emphasis on the fundamental physics and chemistry associated with these materials systems.

b. Prerequisites or co-requisites

ENGR 3450, MATH 3310

c. Indicate whether a required, elective, or selected elective course in the program

Required

Specific goals for the course

a. Specific outcomes of instruction

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes that are addressed by the course.

	Student/ABET Outcome	a	b	c	d	e	f	g	h	i	j	k
Specific Course Learning Outcome		x				x						x
1. Students will learn the concepts of conductivity in electronic materials.		x				x						
2. Students will learn fundamental physics concepts of Boltzman and Fermi-Dirac statistics in electron and hole charge carriers in semiconductors.		x				x						
3. Students will learn the electronic properties of intrinsic, extrinsic and degenerate semiconductors.		x				x						
4. Students will learn fundamental of electronic materials properties can be		x				x						x