Instructor: Guo-Xing Miao
Class days: Sept. 8 (Tue.) – Dec. 7 (Mon.)
Normal lectures: online recording, to be posted each week
Instructor’s contact info: guo-xing.miao@uwaterloo.ca
TA’s contact info: Gabriel De Oliveira Silva (gvinios@uwaterloo.ca)
Course description

Covers the basics of semiconductor physics. The emphasis is on the fundamental physical and operational principles behind semiconductor and optoelectronic devices, such as the formation and modification of semiconductor band structures, the mechanisms influencing carrier population and electrical conduction, the light-matter interactions for photon absorption and emission.

Textbooks

*Physics of Semiconductor Devices, Sze S.M. and Ng Kwok K., Wiley publications*

Grading scheme

6 marked assignments: posted in weeks of Sept.21, Oct.5, Oct.19, Nov.2, Nov.16, and Nov.30, due on the following week’s Friday -- Turn in the completed assignments to Learn’s dropbox folder. **Late homework not accepted.** Marked assignments can be picked up in any of the office hours.

Final grading:

- Assignments #1,2,4,5, 60% (15% each)
- Assignments #3,6, 40% (20% each, a bit heavier than normal to take the place of midterm and final)
Additional university policies:

**Academic Integrity:** In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check www.uwaterloo.ca/academicintegrity/ for more information.]

**Grievance:** A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please be certain to contact the department’s administrative assistant who will provide further assistance.

**Discipline:** A student is expected to know what constitutes academic integrity [check www.uwaterloo.ca/academicintegrity/] to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, www.adm.uwaterloo.ca/infosec/Policies/policy71.htm. For typical penalties check Guidelines for the Assessment of Penalties, www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm.

**Appeals:** A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.

**Note for Students with Disabilities:** The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

**Turnitin.com:** Plagiarism detection software (Turnitin) will be used to screen assignments in this course. This is being done to verify that use of all material and sources in assignments is documented. In the first week of the term, details will be provided about the arrangements for the use of Turnitin in this course.

Note: students must be given a reasonable option if they do not want to have their assignment screened by Turnitin. See: http://uwaterloo.ca/academicintegrity/Turnitin/index.html for more information.