COURSE DESCRIPTION:

COURSE OBJECTIVE:
The goal of this course is to link descriptive models for advanced electronic materials with the constraints that these materials must satisfy in order to be useful, particularly for memory devices & systems.

PRE-REQUISITES:
ECE 3600 and ECE 4190 or equivalents (i.e. permission from instructor).

CONTACT HOURS:
3 per week

COURSE CONTENT:
The course will focus on a subset of the themes outlined above and consider their utility in nano-engineering applications – in particular technologies associated with memory devices. Students will, through assigned reading and personal choice, be required to read, review and summarize material from the current research literature.

HOMEWORK:
A combination of assigned problems and self-directed projects will be set.

TEXTBOOK:
R. Waser, "Nanoelectronics and Information Technology"
S.O. Kasap, "Principles of Electrical Engineering Materials and Devices"

EVALUATION:
Your final course grade is determined by your performance in assignments, term test, and a final examination. The weighting of each of these components is as follows:

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<tr>
<th>COMPONENT</th>
<th>NO</th>
<th>VALUE %</th>
<th>TOTAL VALUE</th>
<th>DETAILS / ADDITIONAL INFO</th>
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<tbody>
<tr>
<td>Homework/Assignments</td>
<td>10</td>
<td>3%</td>
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<tr>
<td>Midterm Exam</td>
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<tr>
<td>Final Examination</td>
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<td>TOTAL</td>
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INSTRUCTOR INFO:
Name      Derek Oliver
Office:   E2-390G
Tel:      204.474.9563
Email:    Derek.Oliver@umanitoba.ca

Office Hours: TBA

VOLUNTARY WITHDRAW:

March 19, 2015

REQUIREMENTS/REGULATIONS

- **Student Responsibilities:** It is the responsibility of each student to contact the instructor if he/she is uncertain about his/her standing in the course and about his or her potential for receiving a failing grade. Students should also familiarize themselves with Sections 4 and 6 of the Regulations dealing with incomplete term work, deferred examinations, and attendance and withdrawal.
  - Lectures: Attendance at lectures is essential for successful completion of this course. Students must satisfy each evaluation component in the course.

ACADEMIC INTEGRITY:

Students are expected to conduct themselves in accordance with the highest ethical standards of the Profession of Engineering and evince academic integrity in all their pursuits and activities at the university. As such, in accordance with the General Academic Regulations and Requirements of the University of Manitoba, Section 7.1, students are reminded that plagiarism* or any other form of cheating is subject to serious academic penalty (e.g. suspension or expulsion from the faculty or university) regardless of media

- examinations
- assignments
- laboratory reports
- term exams

A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty

*Plagiarism:* to steal and pass off (the ideas or words of another) as one's own; use (another's production) without crediting the source