



COURSE OUTLINE
ELEC 420 Nanotechnology
Spring 2014

Instructor

Dr. Chris Papadopoulos
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Office Hours

Day: Tuesday Time: 2:30PM – 5:00PM
(or by appointment)
Location: EOW 429

Lectures

Sections: A01/CRN 21108, A02/CRN 21109
Days: TWF
Time: 9:30AM – 10:20AM
Location: ECS 130

Website

<http://moodle.uvic.ca> (NetLink ID required)

Required Text

Readings will be provided.

References

Nanoelectronics and Information Technology,
Waser (Ed.), Wiley (2005).

Fundamentals of Nanoelectronics, Hanson,
Pearson (2008).

Introduction to Nanoscience, Lindsay, Oxford
(2010).

Topics

- I Nanoscale Imaging and Fabrication
- II Properties of Nanostructures

- III Nanoelectronics
- IV Nanophotonics
- V Bionanotechnology

Assessment

Tests	15; 20% (Take home, due Feb. 18; Mar. 18)
Term Paper	40% (Due April 4)
Final Exam	25%

Submit all work directly to instructor (in-class or office by 5PM). Term papers will not be accepted after the due date.

The final grade obtained from the above marking scheme will be based on the following percentage-to-grade point conversion:

Passing Grades	Grade Point Value	Percentage for Instructor Use Only	
A+	9	90 - 100	
A	8	85 - 89	
A-	7	80 - 84	
B+	6	77 - 79	
B	5	73 - 76	
B-	4	70 - 72	
C+	3	65 - 69	
C	2	60 - 64	
D	1	50 - 59	
Failing Grades	Grade Point Value	Percentage for Instructor Use Only	Description
E	0	35 - 49	Fail, conditional supplemental exam. (For undergraduate courses only)*
F	0	0 - 49	Fail, no supplemental.
N	0	0 - 49	Did not write examination, Lab or otherwise complete course requirements by the end of term or session; no supplemental exam.

*The rules for supplemental examinations are found on pages 80 of the current 2013/14 Undergraduate Calendar.

Term in which E Grade was obtained:	Application Deadline for Supplemental Exam	Supplemental Exam Date
First term of Winter Session (Sept - Dec)	February 28 in the following term	First week of following May
Second term of Winter Session (Jan - Apr)	June 30 in the following term	First week of following September
Summer Session (May - Aug)	October 31 in the following term	First week of following January

Deferred exams will normally be written at the start of the student's next academic term; i.e., approximately 4 months following the deferral of the exam.

Course Objectives and Learning Outcomes

Understand properties of nanoscale materials and tools used to create/characterize them. Examine and apply this knowledge to applications based on nanostructures.

Syllabus

Nanoscale materials and devices. Techniques and tools of nanostructure fabrication and characterization. Properties of low-dimensional materials. Semiconductor nanostructures, metallic nanoparticles, carbon nanotubes, organic molecules, quantum dots. Applications including nanoelectronics and molecular devices, biotechnology, nanoscale computation, nanomechanical devices and nanophotonics.

Guidelines on Religious Observances

See <http://web.uvic.ca/calendar2013/GI/GUPo.html>

Commitment to Inclusivity and Diversity

See <http://web.uvic.ca/calendar2013/GI/GUPo.html>

Standards of Professional Behaviour

You are advised to read the Faculty of Engineering document Standards for Professional Behaviour at <http://www.uvic.ca/engineering/current/undergrad/index.php#section0-25> which contains important information regarding conduct in courses, labs, and in the general use of facilities.

Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the ECE Chair by email or the ECE Chair's secretary to set up an appointment.

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult <http://web.uvic.ca/calendar2013/FACS/UnIn/UARe/PoAcI.html> for the UVic policy on academic integrity. Plagiarism detection software may be used to aid the instructor and/or TA's in the review and grading of some or all of the work you submit.