



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
NANOSCIENCE PROGRAM
COURSE SYLLABUS
FALL 2017

1. Course: Nanoscience 301, Introduction to Nanoscience and Nanotechnology

Lecture Sections:

L01: TuTh 6:00 pm - 7:15 pm, SA 104

Instructor	Office	Tel. No.	e-mail address	Office hours
Dr. Max Anikovskiy	EEEL 237A	(403) 220-3115	m.anikovskiy@ucalgary.ca	By appointment
Dr. Simon Trudel	SB 417	(403) 210-7078	trudels@ucalgary.ca	By appointment
Dr. Elmar Prenner	BI 145A	(403) 220-7632	eprenner@ucalgary.ca	By appointment

Desire 2 Learn (D2L) Nanoscience 301

Nanoscience Program Office: SA 229J, Tel. No.: (403) 220-6049, e-mail address: nanosci@ucalgary.ca

To avoid IT problems, it is recommended that the students use their U of C account for all course correspondence.

2. Course Description:

Lectures: Functional definitions of nanoscience and nanotechnology. Understanding/predicting the behaviour of nanomaterials. Investigation of nanomaterials whose properties depend on size. Exploration of a building up approach to design and fabrication of functional nanomaterials. Examination of applications of nanoscience and nanotechnology in society.

3. Topics Covered and Suggested Readings:

Week number	Dates	Topic
1	SEP 12, 14	Properties of materials at nanoscale
2	SEP 19, 21	Light-matter interactions; intro to quantum
3	SEP 26, 28	Quantum confinement: particle in a box
4	OCT 3, 5	Tunneling, Scanning Tunneling Microscopy
5	OCT 10, 12	Scientific method
6	OCT 17, 19	Scientific Communication
7	OCT 24, 26	Self-assembly: definition and energetics
8	OCT 31, NOV 2	Midterm exam Self-assembly 1
9	NOV 7, 9	Self-assembly – 2/3

10	NOV 14, 16	Self-assembly – 4/5	
11	NOV 21, 23	Bio-systems	
12	NOV 28, 30	Drug carriers and drug delivery routes	
13	DEC 5, 7	Nanotoxicology	Group work on term paper

Term paper: first draft is due Nov 12, 2017; final submission is due Dec 8, 2017

Late submission of the draft will result in a loss of 2 participation marks; late submission of the term paper will result in a 10% mark deduction for each day that the submission is late and a loss of the full mark 3 days past the due date.

Program Director's Approval: Approved by Department Head

Date: August 23, 2017