



UNIVERSITY OF
CALGARY

FACULTY OF SCIENCE
NANOSCIENCE PROGRAM
COURSE OUTLINE Winter 2016

1. **Course:** Nanoscience 401, Design in Nanoscience
Time: 18:00 – 19:15
Days: Tuesday, Thursday
Room: SA 235

Instructors	Office	Tel. No.	E-mail address	Office hours
Dr. Elmar Prenner	BI 145A	(403) 220-7632	eprenner@ucalgary.ca	By appointment
Dr. Simon Trudel	SB 417	(403) 210-7078	trudels@ucalgary.ca	By appointment

Desire 2 Learn (D2L) Nanoscience 401
Nanoscience Program Office: SA 229J, 403- 220-6049, nanosci@ucalgary.ca

2. **Prerequisites:** Nanoscience 301
<http://www.ucalgary.ca/pubs/calendar/current/nanoscience.html>
3. **Grading:** The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Final Examination (120 min; to be scheduled by the Registrar):	30%
Term Test (75 min; February 23, 2016; in class):	25%
Quizzes	20%
Term paper (group project; due Apr 15, 2016):	20%
Participation:	5%

Each piece of work submitted or presented by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

A+	A	A-	B+	B	B-
>90% in <i>all</i> components	86-100%	82-85%	78-81%	74-77%	70-73%

C+	C	C-	D+	D	F
66-69%	62-65%	58-61%	54-57%	50% - 53%	< 50%

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar
5. **Scheduled out-of-class activities:** No class exercises will be held outside of scheduled class hours

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **Course Materials:** Some course materials can be downloaded from D2L Nanoscience 401
No textbook is required for this course.

7. **Examination Policy:** Exams will be closed book. Non-programmable calculators are allowed:
(i) Calculator Feature: the capability to perform calculations electronically on user-entered numerical data without the capability to employ pre-stored or user-entered formulae. This feature is provided by the most elementary calculator, permits the elementary arithmetic operations (addition, subtraction, multiplication and division) and possibly the trigonometric, hyperbolic, exponential and logarithmic operations.
Students should also read the Calendar, [Section G](#), on Examinations.
8. **Approved Mandatory and Optional Course Supplemental Fees:** There are no supplementary fees associated with this course.
9. **Writing across the curriculum statement:** In this course, the quality of the student's writing in the exams, quizzes, and the final paper will be a factor in the evaluation of these pieces of work. See also [Section E.2](#) of the University Calendar.
10. **Human studies statement** No human studies are conducted in this course.
11. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**
- (a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- (c) **Academic Accommodation Policy:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf. Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Chemistry, Dr. Ashley Causton, by email ahugchem@ucalgary.ca or phone (403) 220-5353.
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **Student Union Information:** VP Academic Phone: 220-3911 Email: suvpaca@ucalgary.ca.
SU Faculty Rep. Phone: 220-3913 Email: sciencerep@su.ucalgary.ca; [Student Ombudsman](#)
- (g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- (h) At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.



**UNIVERSITY OF
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NANOSCIENCE PROGRAM
COURSE SYLLABUS

2. **Course:** Nanoscience 401, Design in Nanoscience

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Tentative schedule of topics covered:

Week #	Dates	Topics
1	Jan 12, 14	Experimental design
2	Jan 19, 21	Nanoparticle (NP) synthesis
3	Jan 26, 28	Electron microscopy
4	Feb 2, 4	Optical and magnetic properties of NPs
5	Feb 9, 11	Nanosensors Dynamic light scattering
6	Feb 16, 18	Reading week
7	Feb 23, 25	Term test (February 23) Dynamic light scattering
8	Mar 1, 3	Fluorescence spectroscopy and microscopy
9	Mar 8, 10	Atomic force microscopy
10	Mar 15, 17	Dip-pen nanolithography Nano-Ag case study
11	Mar 22, 24	Biomaterials and nanobiosensors
12	Mar 29, 31	Design of drug delivery systems
13	Apr 5, 7	Characterization of drug carriers and medical applications
14	Apr 12	Work on term paper

April 13, 2016: end of classes

April 15, 2016: Term Paper is due