



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
NANOSCIENCE PROGRAM
COURSE OUTLINE
WINTER 2017

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

Lecture Sections:

L01: TuTh 6:00 pm - 7:15 pm, SA 235

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

Desire 2 Learn (D2L) Nanoscience 401

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

2. **Prerequisites:** Completion of 18 units (3.0 full-course equivalents) in courses offered by the Faculty of Science (<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:

Midterm Test	25% (75 min; Feb. 28, 2017; in class)
Quizzes and assignments:	20%
Term paper:	20% (group project)
Participation:	5%
Final Examination:	30% (120 min; to be scheduled by the Registrar)

Each piece of work (midterm test, quiz, term paper, or final examination examination) submitted 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. The conversion between course percentage and letter grade is given below:

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.

There are no deferred Midterm/ term test examinations. In the event that a student misses the midterm or any course work due to illness then an official medical note will be required. Absences must be reported **within 48 hrs**. If a student misses the midterm for other reasons, then analogous documentation will be required. The course coordinator will need to see the original documentation (not electronic copy) for review / decision and keep it (or a copy) for their records. The documentation must be provided to the course coordinator **within 15 days** of the date of the midterm in order for an excused absence to be considered. If an excused absence is approved, then the percentage weight of a legitimately missed midterm examination *will be pro-rated among the remaining components of the course* OR will be transferred to the final examination (see [Section E.3](#) of the University Calendar).

5. **Scheduled out-of-class activities:** No class activities 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:** Examinations will be closed book. Non-programmable calculators during examinations will be allowed.
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 supplemental fees associated with this course.
9. **Writing across the curriculum statement:** In this course, the quality of the student's writing in all submitted work will be a factor in the evaluation of this work. See also [Section E.2](#) of the University Calendar.
10. **Human studies statement:** No human studies are conducted in this course.
11. **Reappraisal of Grades:** Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.
 - (a) **Term work:** A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded, may have the work re-graded. The student shall discuss the work with the Instructor **within 15 days** of either being notified about the mark, or of the item's return to the class. If not satisfied, the student shall immediately submit the *Reappraisal of Term work Grade form* to the Associate Head of Chemistry, Dr. Farideh Jalilehvand (ahugchem@ucalgary.ca), who will arrange for a reassessment of the work if, and only if, the student's argument is valid. *Note:* Students should attempt to present their rationale as effectively and as fully as possible. Mere dissatisfaction with a decision is not sufficient grounds for the appeal of a grade, or other academic decision. See sections [I.1](#) and [I.2](#) of the University Calendar.
 - (b) **Final Exam:** A student wishing a reappraisal of the final grade should contact the instructor. If not satisfied, the student shall submit the request to the Enrolment Services. See [Section I.3](#) of the University Calendar
12. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**
 - (a) **Misconduct:** 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) **Student Accommodations:** 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 the Chemistry Department, Dr. Farideh Jalilehvand, by email ahugchem@ucalgary.ca or phone (403) 220-5341.

- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call (403) 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: 403 220-3911 Email: suvpaca@ucalgary.ca
SU Faculty Rep. Phone: (403) 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;
Student Ombuds Office: (403) 220-6420 Email ombuds@ucalgary.ca
<http://ucalgary.ca/provost/students/ombuds>
- (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) **U.S.R.I.:** 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.

Department Approval: Approved by Department Head

Date: December 21, 2016

Syllabus

Week number	Dates	Topic
1	Jan 10, 12	Experimental design
2	Jan 17, 19	Nanoparticle (NP) synthesis
3	Jan 24, 26	Atomic Force Microscopy
4	Jan 31, Feb 2	Dynamic Light Scattering
5	Feb 7, 9	UV-Vis and Fluorescence spectroscopy
6	Feb 14, 16	Confocal microscopy and Fluorescence Correlation Spectroscopy
7	Feb 21, 23	Reading week
8	Feb 28, Mar 2	Term test Fluorescence Cross Correlation Spectroscopy
9	Mar 7, 9	Electron microscopy
10	Mar 14, 16	Nanolithography
11	Mar 21, 23	Biomaterials and nanobiosensors
12	Mar 28, 30	Design of drug delivery systems
13	Apr 4, 6	Characterization of drug carriers and medical applications
14	Apr 11	Work on term paper

Term paper is due April 12, 2017

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.