UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

Nanoscience Program
Science
B417
403 210-7078
nans@ucalgary.ca

COURSE OUTLINE

1. **Course:** NANS 301, Introduction to Nanoscience and Nanotechnology - Fall 2020

   Lecture 01: TR 18:00 - 19:15 - Online

Instructor	Email	Phone	Office	Hours
Dr. Max Anikovskiy	m.anikovskiy@ucalgary.ca	403 220-3115	EEEL 237A	by appointment
Dr Simon Trudel	trudels@ucalgary.ca	403 210-7078	SB 417	by appointment
Dr Elmar Prenner	eprenner@ucalgary.ca	220-7632	BI 145	TBA

   Online Delivery Details:

   Some aspects of this course are being offered in real-time via scheduled meeting times. For those aspects you are required to be online at the same time.

   This course will be delivered online, with no face-to-face components.
   The lectures will be delivered in three blocks by three co-instructors.

   For clarity, *synchronous* lectures are *live*; *asynchronous* are viewed *on-demand*.

   Except for asynchronous content, synchronous content will *not* be recorded. Lecture notes will be made available on D2L.

   Prof. Max Anikovskiy (September 8 to October 20)
   This block will be delivered in a *synchronous* fashion (students are expected to attend at scheduled lecture times).

   Prof. Simon Trudel (October 22 to November 19)
   This block will be delivered in a *hybrid* fashion. Students are expected to attend *most* of the scheduled lecture times, however some content will be made available in online recordings ahead (and in lieu of) lecture time. Specific dates and times for synchronous content will be posted on D2L, at least one week in advance. Students should reserve the scheduled class time for synchronous content.

   Prof. Elmar J. Prenner (November 24 to December 8)
   This block will be delivered in a *synchronous* fashion. Students are expected to attend at scheduled lecture times.

   Course Site:

   D2L: NANS 301 L01-(Fall 2020)-Introduction to Nanoscience and Nanotechnology

   Note: Students must use their U of C account for all course correspondence.

   Instructors will respond to email inquiries about the course within 24 hours, except on weekends and holidays.

2. **Requisites:**

   See section 3.5.C in the Faculty of Science section of the online Calendar.

   Prerequisite(s):
   Chemistry 209; or Chemistry 201 or 211; and 203 or 213; and 3 units from Mathematics 249, 265, 275.

3. **Grading:**

   The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar.

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

Component(s)	Weighting %	Date	Note
Quizzes (synchronous)*	18	see Note a	a
Assignments	12	see Note b	b
Term Test (synchronous)*	25	October 20	c
Term Paper	20	December 8	d
Final Exam (synchronous)*	25	scheduled by registrar	e

Notes

a. Quizzes are done in-class at the beginning of class, designed to be completed in 8 minutes but you will be given 12 minutes to account for any issues. Quizzes will tentatively occur on the following dates: September. 17 and 24, October 1, 8, 27, November 3, 19, and December 1 and 8. While dates may vary by one class period, the number of quizzes is fixed. All Quizzes carry the same weight. Students will be given notice the lecture period before should the quiz be postponed (quizzes will not be moved up in the schedule).

b. Assignments are done outside of scheduled lecture time. There will be 4 assignments:
A1: October 27, group assignment, due November 3. All participating students in a group will be assigned the same grade.
A2: November 17, individual assignment; 30 minutes to complete online (20 minutes planned, 10-minute contingency) due by November 19, 18:00.
A3: November 26, Individual assignment, due November 30
A4: December 3, Individual assignment, due December 7

The **Term Test** and **Quizzes** will be synchronous assessments.

c. The Term Test will be a scheduled, synchronous out-of-class activity. The term test will be from 17:30 to 20:00. The test is designed to be completed within 75 minutes, you will be given 150 minutes to account for any issues. You MUST start your exam between 17:30 and 18:00, after which the link to the exam will become unavailable.

d. The term paper is a group task. All students will be assigned the same grade, unless egregious circumstances warrent so. These will be discussed with the instructor prior to submission.

e. The Final Exam will be a 2-hour synchronous exam, scheduled by the registrar. This does not include an additional 50% contingency (1 hr).

* For any synchronous or timed assessment, time will be adjusted for SAS students if needed and accommodations for students will be done on a case-by-case basis.

Students requiring non-SAS (e.g., accommodating time zones) must provide this request to the instructor no less than 7 days before the assessment's scheduled time.

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component 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 a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	95 %	86 %	82 %	78%	74%	70 %	66 %	62%	58%	54 %	50 %

This course has a registrar scheduled final exam.

4. **Missed Components Of Term Work:**

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

5. **Scheduled Out-of-Class Activities:**

The following out of class activities are scheduled for this course.

Activity	Location	Date and Time	Duration
Term Test	Web-Based	Tuesday, October 20, 2020 at 5:30 pm	2.5 Hours

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a conflict with the out-of-class-time-activity, please contact your course coordinator/instructor no later than **14 days prior** to the date of the out-of-class activity so that alternative arrangements may be made.

6. **Course Materials:**

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC ELearning online website.

7. **Examination Policy:**

The term test and final exams will be open book. Access to your class notes and all material on D2L are allowed. Both exams must be conducted individually. A detailed explicit list of allowed resources will be posted 1 week prior to the exam.

Quizzes must be conducted individually and meant to be closed book. Access to class notes, handouts, D2L and the internet are not permitted.

Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

9. **Writing Across The Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.

10. **Human Studies Statement:**

Students will not participate as subjects or researchers in human studies.

See also Section E.5 of the University Calendar.

11. **Reappraisal Of Grades:**

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. 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:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections I.1 and I.2 of the University Calendar

b. **Final Exam:** The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

12. **Other Important Information For Students:**

a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).

b. **SU Wellness Center:** For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.

c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at 403-220-2208. The complete University of Calgary policy on sexual violence can be viewed at (https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf)

d. **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. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a report. **These are only examples**.

e. **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 procedure-for-accommodations-for-students-with-disabilities.pdf.

Students needing an accommodation in relation to their coursework or to fulfill 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 Nanoscience Program, Dr. Yuen-Ying Carpenter by email ahugchem@ucalgary.ca or phone 403-220-6908. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See Section E.4 of the University Calendar.

f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). 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 Legal Services website.

g. **Student Union Information:** VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca.

h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

Course Outcomes:

- explain key concepts of nanoscience and nanotechnology
- explain why properties of nanomaterials are size dependent
- predict the behavior of nanomaterials
- describe approaches to design and fabrication of functional nanomaterials
- describe the scientific method and justify its use in science
- outline the structure of a research paper and a peer review
- interpret and communicate published research to a general scientific audience
- participate actively in a group by contributing to group discussions and writing a scientific text

Electronically Approved - Sep 07 2020 10:20

Department Approval

Electronically Approved - Sep 07 2020 21:38

Associate Dean's Approval