



COURSE OUTLINE

1. **Course:** NANS 301, Introduction to Nanoscience and Nanotechnology - Fall 2021

Lecture 01: TR 18:00 - 19:15 in EEEL 161

Instructor	Email	Phone	Office	Hours
Dr Elmar Prenner	eprenner@ucalgary.ca	220-7632	BI 145	TBA
Dr Simon Trudel	trudels@ucalgary.ca	403 210-7078	SB 417	TBA
Dr. Stephen Lane	stephen.lane@ucalgary.ca	403 220-2250	EEEL 544	By appointment

In Person Delivery Details:

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.

The following components will be delivered in-person:

Prof. Simon Trudel (September 7 to October 14)

This block will be delivered in-person. Students are expected to attend the scheduled lecture times, however some content may be made available in online recordings ahead of lecture time.

Prof. Elmar J. Prenner (November 25 to December 9)

This block will be delivered in-person. Students are expected to attend the scheduled lecture times, however some content may be made available in online recordings ahead of lecture time.

Re-Entry Protocol for Labs and Classrooms:

To limit the spread of COVID-19 on campus, the University of Calgary has implemented safety measures to ensure the campus is a safe and welcoming space for students, faculty and staff. The most current safety information for campus can be found [here](#). **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.

To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

The following components will be delivered in a blended format:

Prof. Stephen Lane (October 19 to November 23)

This block will be delivered in a *blended* fashion (students are expected to attend at scheduled lecture times).

1. Pre-recorded lectures will be posted on D2L each week, posted on Monday. These are expected to last around 45-60 minutes.
2. In-class components will offer students the opportunity to work with their group on exam-style questions.

Course Site:

D2L: NANS 301 L01-(Fall 2021)-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 business hours.

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 14	c
Term Paper	20	December 9	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 10 minutes. Quizzes will tentatively occur on the following dates: September 14, 23 and 28, October 26, November 4, 23, and December 2 and 9. 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: September 21, group assignment, due September 24. All participating students in a group will be assigned the same grade.

A2: October 7, individual assignment, due October 12, by 18:00.

A3: November 23, Individual assignment, due November 30

A4: December 3, Individual assignment, due December 7

The **Term Test** and **Quizzes** will be in-person assessments.

c. The Term Test will be a scheduled, in-person exam, during regular class time.

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

e. The Final Exam will be a 2-hour exam, to be scheduled by the registrar.

* 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.

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 will have a final exam that will be scheduled by the Registrar. [The Final Examination Schedule](#) will be published by the Registrar's Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 2 hours.

The University of Calgary offers a [flexible grade option](#), Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: <https://science.ucalgary.ca/current-students/undergraduate/program->

[advising/flexible-grading-option-cg-grade](#)

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, one possible arrangement is that the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course. This option is at the discretion of the coordinator and may not be a viable option based on the design of this course.

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

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

Activity	Location	Date and Time	Duration
Midterm	On-Campus, room to be announced	Thursday, October 14, 2021 at 6:00 pm	75 Minutes

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:**

This course does not have a text book. All material supplied by the instructor can be found on D2L.

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:**

All 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 are 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 Services:** For more information, see www.ucalgary.ca/wellnesscentre or call [403-210-9355](tel: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](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed at (<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Sexual-and-Gender-Based-Violence-Policy.pdf>)
- d. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional [Code of Conduct](#) and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

[Student Handbook on Academic Integrity](#)
[Student Academic Misconduct Policy](#) and [Procedure](#)
[Research Integrity Policy](#)

Additional information is available on the [Student Success Centre Academic Integrity page](#)

e. Academic Accommodation Policy:

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.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, by filling out the [Request for Academic Accommodation Form](#) and sending it to Dr. Yuen-Ying Carpenter by email yyscarpe@ucalgary.ca preferably 10 business days before the due date of an assessment or scheduled absence.

- 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 04 2021 14:57

Department Approval

Electronically Approved - Sep 07 2021 10:33

Associate Dean's Approval