



CHEM 451 & CHEM 651 – Fall 2016

Room CC-405 LOY - Wednesday & Friday 11:45 to 13:00

Prerequisites: CHEM 217, 218, 221, 222, 234, 235 & 241

Instructors:

Prof. John Capobianco	SP 275-13	john.capobianco@concordia.ca
Prof. Louis Cuccia	SP 275-17	louis.cuccia@concordia.ca
Prof. Christine DeWolf	SP 275-21	christine.dewolf@concordia.ca
Prof. John Oh	SP 275.09	john.oh@concordia.ca
Prof. Rafik Naccache	SP 265.20	rafik.naccache@concordia.ca

Office hours: By appointment. We will try our best to promptly reply to your questions sent by email. For a quick reply please use 'CHEM451' or 'CHEM651' in the subject heading.

Course topics:

- Cuccia: Nanochemistry basics, bio-inspired materials, mesoscale self-assembly, DNA nanochemistry, supramolecular nanochemistry.
- DeWolf: Chemical patterning and lithography, dip-pen nanolithography, scanning probe microscopy, soft lithography, self-assembled monolayers.
- Naccache: Advanced techniques for the characterization of nanomaterials, synthesis and characterization, as well as application of metallic and carbon-based nanomaterials.
- Oh: Polymeric nanomaterials, biomaterials, synthesis and characterization of functional block copolymers, aqueous self-assembly, micellar nanocarriers, drug delivery applications, cellular imaging.
- Capobianco: Optical nanomaterials, optical spectroscopy, synthesis and characterization of upconverting nanoparticles, applications of optical nanomaterials (bioimaging, drug delivery, nanothermometry, photodynamic therapy, photoswitching).

Evaluation: The final grade of the course is calculated based on contributions from each of the five instructors. The composition of the final grade is as follows:

Cuccia:	Assignments and midterm (17.5%)	
DeWolf:	midterm (17.5%)	
Naccache:	Final exam (17.5%)	} Joint final
Oh:	Final exam (17.5%)	
Capobianco:	Final exam (17.5%)	
Project:	15% report, 10% oral presentations, 5% participation	

To pass the course, you must earn $\geq 50\%$ theory (weighted average of the 5 modules).

Note that the evaluation for undergraduate students may differ from that of graduate students. All assignments and reports must be handed in as both a hard copy and as an MS Word file.

Timeline for Nanochemistry course

	Planned material (subject to change)
September 7	Announce nano-projects Each professor will describe a project Divide into groups Arrange day and time for “labs”
September 9	L. Cuccia
September 14	L. Cuccia
September 16	L. Cuccia
September 21	L. Cuccia
September 23	C. DeWolf
September 28	C. DeWolf
September 30	C. DeWolf
October 5	C. DeWolf
October 7	L. Cuccia Midterm
October 12	C. DeWolf Midterm
October 14	Nano-projects: Preliminary project proposals
October 19	R. Naccache
October 21	R. Naccache
October 26	R. Naccache
October 28	R. Naccache
November 2	J. Oh
November 4	J. Oh
November 9	J. Oh
November 11	J. Oh
November 16	J. Capobianco
November 18	J. Capobianco
November 23	J. Capobianco
November 25	J. Capobianco
November 30	Nano-project final presentations
December 2	Nano-project final presentations

Course material:

There is no required textbook for this course. You will be provided with the appropriate reading material for each section of the course. Course information, lecture material (PowerPoint slides), reading material, and assignments may be made available on the NanoChemistry Course Website (located at the Course Websites section of MyConcordia: <https://www.myconcordia.ca/>)

MANDATORY QUIZ AND SEMINAR

As part of this course, you are required to i) attend a Chemistry and Biochemistry Departmental Seminar on the academic conduct code and the appropriate use of information sources and ii) pass the online quiz associated with this seminar (note: passing grade for the quiz is 100%). The aim of this seminar is to clarify the academic conduct code in terms of what practices will be considered unacceptable with regards to work submitted for grading in Chemistry and Biochemistry courses. You are only exempt from repeating the seminar and the quiz if you have done both in fall 2011 or more recently,* otherwise you are required to repeat both this term. This short seminar (1 hour) will be held at the following times (note that late-comers will not be admitted):

Date	Time	Place
Monday, Sept. 26	16:45-17:45	CC-308
Tuesday, Sept. 27	16:45-17:45	HB-130
Wednesday, Sept. 28	16:45-17:45	CC-308
Wednesday, Sept. 28	20:45-21:45	HC-157
Thursday, Sept. 29	16:45-17:45	CC-204
Thursday, Sept. 29	20:45-21:45	HC-157
Friday, Sept. 30	16:45-17:45	CC-310

As space for each of the seminars is limited by the room size, please sign up to your preferred time. Sign up sheets are available outside SP 201.01 (Departmental office).

If you do not complete this course requirement, your final grade for the course may be lowered by one full letter grade with an incomplete (INC) notation until such time as this requirement is completed. Please refer to the undergraduate calendar (section 16.3.6) for details on removal of an incomplete notation.

* You are exempt if you can locate your ID in the pdf file located on the CHEM 101 Moodle site (for guest login, go to: <http://moodle.concordia.ca/moodle>, Arts and Science, Chemistry and Biochemistry, Specialized Chemistry Sites, CHEM 101, look under FAQ).

PLAGIARISM AND OTHER FORMS OF ACADEMIC DISHONESTY:

The academic code of conduct can be found in section 17.10 of the academic calendar (<http://www.concordia.ca/academics/undergraduate/calendar/current/17-10.html>). Any form of unauthorized collaboration, cheating, copying or plagiarism found in this course will be reported and the appropriate sanctions applied. The mandatory seminar is a clear and fair opportunity to learn what our faculty regards as academic misconduct. Failure to take part in this learning opportunity and thus ignorance of these regulations is no excuse and will not result in a reduced sanction in any case where academic misconduct is observed.