

Medicinal Chemistry Seminars

CHEM4513 Fall 2020

Ghislain Deslongchamps, Department of Chemistry, U.N.B.

Calendar Description:

3 ch (3C) Selected Topics in Medicinal Chemistry. Note that enrolment is limited to students in the Chemistry, Medicinal Chemistry, and Biology-Chemistry Comprehensive programs (Majors and Honours). Students in other programs must obtain permission from the instructor to register for this course.

Coordinator:

Ghislain Deslongchamps
Office hours: Toole 237 / MS Teams (by appointment)
e-mail: ghislain[at]unb.ca

Timetable:

September 15 - December 8, 2020
Tuesday: 2:30-4:50, Alternative Delivery.

Pre/Corequisites:

Prerequisite: CHEM 3421 and CHEM 3523.

Enrolment:

Enrolment is limited to students in the Chemistry, Medicinal Chemistry, and Biology-Chemistry Comprehensive programs (Majors and Honours).

Desire2Learn (Brightspace):

Course materials, seminar schedule, selected research papers, and other information available via Desire2Learn (Brightspace) at <https://lms.unb.ca>.

Course Details:

Each student will prepare two seminars on medicinal chemistry topics and present them to their coordinator and classmates. Because of covid restrictions, seminars will be presented and moderated over Microsoft Teams (MS Teams).

Topic selection/approval: Students must select two research papers from the 2019-2020 research literature and must have them approved by the course coordinator at least two weeks prior to their presentation dates. For a list of recommended journals see [Appendix I](#). For each seminar, students must email a copy of the full article (pdf) to the course coordinator for approval (abstracts, web links and other article pointers cannot be accepted). Students must check the seminar schedule on D2L prior to submitting their seminar topics in order to avoid duplicate paper selections. Once approved, a pdf copy of each paper will be linked to the seminar schedule on D2L.

Seminar scheduling: Seminars will be scheduled at random during the first class. The same presentation order will be used for the two rounds of seminars. The seminar schedule, along with links to the seminar papers as they become available, will be maintained on D2L by the course coordinator. Seminars may not be rescheduled to another date once entered into D2L. A schedule template is available in [Appendix III](#).

Seminar preparation: The seminars must be prepared in PowerPoint (or Keynote or equivalent) and a pdf copy of each seminar must be emailed to the coordinator at least 2 days prior to the presentation date (i.e. by the preceding Sunday at midnight). Seminars must be **25 minutes** in length.

Seminar presentation: Each student will have 25 minutes to present their seminar over MS Teams. The course coordinator will record each seminar on Teams for further evaluation (students will not have access to the seminar recordings). Seminar presentations will be followed by a 10-minute question period involving classmates and the coordinator, moderated by the coordinator over MS Teams.

Question period: At the end of each seminar, the course coordinator will moderate a question period from the class participants. A general discussion may follow after the question period if time allows. This will be the main method for evaluating class participation. For this reason, it is imperative that students read the papers prior to class (see "Class Participation").

Seminar evaluation:

The course coordinator will assess seminar performances based on a rubric that evaluates these three main categories (sample rubric can be found in [Appendix II](#)):

- Knowledge and Content: 28/66 ($\approx 42\%$)
- Presentation Skills: 28/66 ($\approx 42\%$)
- Handling of Questions: 10/66 ($\approx 16\%$)

Class participation:

At the end of each individual seminar, class participants will have the opportunity to ask pertinent questions to the presenter, followed by questions from the course coordinator. Students will be assigned a "class participation" score by the coordinator based on their questions and overall participation in discussions throughout the term. Collated participation scores for the term will comprise 20% of the final course grade. Overall participation will be evaluated by the course coordinator based on the type and quality of questions that are asked throughout the semester, as well as overall class engagement during question/discussion period.

Course assessment:

Seminar #1*, date TBA	35%
Seminar #2*, date TBA	45%
Class participation**	<u>20%</u>
Total***	100%

* Rubric scores will be converted from 66 points to 35% and 45% for seminars #1 and #2, respectively. Failure to present one of the seminars will result in an automatic "F" grade for the course.

** Based on question period and class discussion following presentations.

*** Class attendance is mandatory. 1 unjustified absence: -10/100 points; 2 unjustified absences: - 20/100 points; 3 unjustified absences: automatic "F" grade for the course.

Grading:

A+	90%	B-	62%
A	85%	C+	56%
A-	80%	C	50%
B+	74%	D	40%
B	68%	F	<40%

Learning outcomes:

Upon completion of this course, you should be able to:

- fully understand a specific topic reported on a published research paper, including:
 - the background of the work
 - the scientific concepts described in the work
 - the different experimental methodologies reported
 - the various means by which the results are presented (text, images, figures, tables, schemes)
 - the mechanisms of any organic reactions used in the work
 - the concluding statements
- understand the most relevant decisions that were made during the research work
- make a critical assessment of the work
- prepare a seminar presentation with PowerPoint (or equivalent) software
- effectively present and explain scientific concepts to an audience with a varied background
- learn how to make a topic interesting
- learn how to give convincing arguments
- ask pertinent questions after attending a seminar and be able to engage in meaningful discussions related to the presentation

Academic offenses (from Undergraduate Calendar)

The University of New Brunswick places a high value on academic integrity and has a policy on plagiarism, cheating and other academic offences.

Plagiarism includes:

1. quoting verbatim or almost verbatim from any source, including all electronic sources, without acknowledgement;
2. adopting someone else's line of thought, argument, arrangement, or supporting evidence without acknowledgement;
3. submitting someone else's work, in whatever form without acknowledgement;
4. knowingly representing as one's own work any idea of another.

For more information, please see the Undergraduate Calendar, Section B, Regulation VII.A, or visit <http://nocheating.unb.ca>. It is the student's responsibility to know the regulations.

Appendix I: Recommended journals

Angewandte Chemie, International Edition
Annual Reports in Medicinal Chemistry
Annual Review of Biochemistry
Annual Review of Medicinal Chemistry
Biochemistry
Bioorganic and Medicinal Chemistry
Chemistry: A European Journal
Chemistry & Biology
Current Drug Metabolism
Current Drug Targets
Current Medicinal Chemistry
Current Opinion in Chemical Biology
Current Opinion in Drug Discovery and Development
Current Opinion in Investigational Drugs
Current Pharmaceutical Biotechnology
Current Pharmaceutical Design
Drug Design and Discovery
Drug Development Research
Drug Discovery and Development
Emerging Therapeutic Targets
European Journal of Medicinal Chemistry
Journal of Biological Chemistry
Journal of Chemical Information and Modeling
Journal of Computational Chemistry
Journal of Computer-Aided Molecular Design
Journal of The American Chemical Society
Journal of Medicinal Chemistry
Journal of Organic Chemistry
Medicinal Research Reviews
Mini Reviews in Medicinal Chemistry
Modern Drug Discovery
Modern Pharmaceutical Design
Molecular Pharmacology
Nature
Nature Medicine
New Journal of Chemistry
Perspectives in Drug Discovery and Design
Proceedings of the National Academy of Science
Proteins
Progress in Drug Research
Progress in Medicinal Chemistry
Science
Tetrahedron
Trends in Biochemical Sciences
Trends in Pharmacological Sciences

Appendix II: Sample seminar evaluation rubric

Knowledge and Content	≤ 1 (poor)	2 (average)	3 (admirable)	4 (outstanding)	SCORE
Organization and presentation	Hard to follow; sequence of info jumpy	Most info presented in sequence	Info presented in logical sequence; easy to follow	Info presented as interesting story in logical, easy to follow sequence	
Background content	Material not clearly related OR too much bkgnd	Material sufficient but not clearly presented	Material sufficient AND well presented	Material sufficient AND exceptionally presented	
Methods	Methods too brief or insufficient OR too detailed	Sufficient but not clearly presented	Sufficient AND effectively presented	Sufficient AND exceptionally presented	
Results (figs, graphs, tables)	Some figures hard to read / poor format	Majority of figures clear	Most figures clear	All figures clear	
	Some poor explanations	Reasonably explained	Well explained	Exceptionally explained	
Knowledge of subject	Does not have grasp of info	At ease with most info	At ease with all info	Mastery of knowledge	
Critique	none	Picked up on minor issues	Picked up on important issues	Very insightful	
				Sub-total:	/28
Presentation Skills	≤ 1 (poor)	2 (average)	3 (admirable)	4 (outstanding)	SCORE
Graphics (use of PowerPoint)	Uses graphics that rarely support text/presentation	Uses graphics that relate to text / presentation	Uses graphics that explain text / presentation	Uses graphics that explain and reinforce text / presentation	
Spelling/grammar	> 10 misspellings and/or grammar errors	> 5 misspellings and/or grammar errors	> 2 misspellings and/or grammatical errors	No misspellings and/or grammatical errors	
Elocution	Incorrectly pronounces many terms	Incorrectly pronounces some terms	Incorrectly pronounces few terms	Correct, precise pronunciation of all terms	
	Mumbles; Voice is low; difficult to hear	Voice fluctuates from low to clear; difficult to hear	Voice is clear with few fluctuations; audience can hear well most time	Voice is clear and steady; audience can hear well at all times	
Eye contact	Reads most slides; no or occasional eye contact	Refers to slides; occasional eye contact	Refers to slides; eye contact most time	Refers to slides; engages audience	
length	<20 min >30 min	<22 min >28 min	<24 min >26 min	24-26 min.	
pace	Rushed / dragging throughout	Rushed / dragging in parts	Most of the seminar well paced	Well-paced throughout	
				Sub-total:	/28
Questions	≤ 4 (poor)	6 (average)	8 (admirable)	10 (outstanding)	SCORE
Questions	answered very few questions	answered basic questions	answered all questions but failed to elaborate	answered all questions with elaboration	
				TOTAL:	/66

Appendix III: Schedule template

- Sept. 15:** Course outline, seminar scheduling, Seminar schedule will be posted on D2L that evening.
- Sept. 22:** Presentation skills lecture (G. Deslongchamps).
- Sept. 29:** Presentations 1a, 2a, 3a
- Oct. 6:** Presentations 4a, 5a, 6a
- Oct. 13:** Presentations 7a, 8a, 9a
- Oct. 20:** Presentations 10a, 11a, 12a
- Oct. 27:** Presentations 13a, 14a, 15a
- Nov. 3:** Presentations 1b, 2b, 3b
- Nov. 10:** No classes (Reading Week)
- Nov. 17:** Presentations 4b, 5b, 6b
- Nov. 24:** Presentations 7b, 8b, 9b
- Dec. 1:** Presentations 10b, 11b, 12b
- Dec. 8:** Presentations 13b, 14b, 15b