CHEM 498I / 620I – An Introduction to Medicinal Chemistry – Fall 2015

GENERAL INFORMATION

This course will develop an understanding of drug design and the molecular mechanisms by which drugs act on the body. It will envelope areas of overlapping disciplines such as chemistry, physiology, biochemistry, microbiology, cell biology and pharmacology. The course is presented in a "reading" format supported by some lectures, discussions and presentations by students. Class discussions and lectures will not necessarily "cover" the textbook material. We will focus on key points, but also examine issues that arise from the material in the book and from recent literature. In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change without notice.

Instructor **Dr. Pat Forgione**
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Course Format Lectures: 2.25 h / week, 13 sessions; Wednesdays, 18:00-20:15

Suggested Materials 1) An Introduction to Medicinal Chemistry, G.L. Patrick, Oxford University Press, 2013, paperback ISBN 978-0-19-969739-7

Interesting Read Molecules that Changed the World, Nicolaou, K.C. Montagnon, T. Wiley-VCH, 2008 ISBN 978-3-527-30983-2

Molecular models: Using models helps considerably with many aspects of organic chemistry – many concepts require you to picture, rotate and draw 3D objects. Models **are** permitted in exams. You are strongly advised to buy a model kit.

GRADING SCHEME, DEADLINES & ABSENCES

To pass the course, you must earn ≥ 50% on the in-class tests. The final grade will be weighted as follows:

Oral Presentations:	30 % (**Oct 28th, Nov 4th and 11th**)
Term Paper:	20 % (3 % for preliminary abstract, 17 for final 5-page report)
In-Class Tests:	40-50 % (3 quizzes, one on each of Part A, B and C of the text book each weighted equally).
Take Home Test:	0-10 % (up to four)

Oral Presentations: Undergraduate students will form teams of three. Each team will choose one of the following chapters from the textbook: Chapter 19, 20, 21, 22, 23, 24 and 25. Each team will give a 1 hour lecture on their chosen chapter, with each student equally presenting a portion. Each PowerPoint presentation should be about 50 minutes long with a ten-minute question period. Depending on how detailed each slide is, you should have between 30-40 slides max. Although this will be done independently by each group, I will aid you in preparing the final presentation. In order for you to obtain feedback, you must send a preliminary copy to me 1 week before your presentation. This does not have to be a final version, but a rough draft to discuss what important aspects you should include, ensure you are not including too much material etc. Students who seek my help in advance have always been among the best presentations. However, if you come to me last-minute for help, I will not be able to do so, so please prepare accordingly! In order to give everyone a chance to get the chapter they are most interested in, **please inform me of your team composition and a ranking of your top 3 choices by September 23rd 2015.** If more than one team chooses a chapter, I will have a draw out of a hat to determine which team gets the chapter. Each student must evaluate all the presentations they attend. An evaluation form will be handed out before the presentations. The presentation evaluation will be weighted in the following way: 60% instructor and 40% classmates. If a student misses the day of their presentation, with a suitable note justifying the absence, they will be allowed to present in a subsequent class. If no note is provided within 1 week, the student will receive a grade of 0. To prepare chemical structures for the presentation, an excellent free tool is available here: http://accelrys.com/products/informatics/cheminformatics/draw/

Presentation Participation: Each student is required to ask (at least) 3 questions over the entire presentation periods. Question will be evaluated on quality and questions that engage the class in learning. You may not obtain more points by asking more than three questions but you are certainly welcome to ask more. If a student misses more than 25% of the presentations without a suitable note provided within 1 week of the missed class(es), they will obtain a score of 0 for the participation grade.

Term Paper: Each student is required to provide a 5-page double spaced term paper on any topic related to medicinal chemistry that is not covered in the course. This is broadly defined intentionally to allow you to choose any topic that may be of interest to you, however, a preliminary abstract (1-page double spaced) is due September 30th in order to obtain approval from me that it is an appropriate topic. The topic should fit into many of the topics that will be covered in Section C of the course textbook and should be based on the primary science literature (eg J. Med. Chem., Med. Chem. Lett., etc, see me if you are unsure). Feel free to see me in advance of this due date to discuss your topic choices. Late submissions will result in a penalty of -10% / day! I will evaluate this and constructive comments will be provided to help you with potential pitfalls that may be present in your disconnections. Grading will be based on the originality of the topic, the legibility and quality of the writing/chemical structures, proper referencing (ACS style) formatting. Please see me if you need additional information for the expectations. Final paper is **due December 2nd, in-class (late submissions – 10% / day!)**.

In-Class Tests: This will be based Part A, B and C of the course textbook. Each test date will be announced in class and each test will be weighted equally.

Take-Home Tests: There may be up to four guest lectures in this course. If so, two take-home tests related to these lectures may be given that will be worth 10% total each worth an equal amount (if four guest lectures, 2.5% each) and are due the week after the lecture was given.

PLAGIARISM AND OTHER FORMS OF ACADEMIC DISHONESTY – Highly Encouraged QUIZ AND SEMINAR

As part of this course, you are ***encouraged*** 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. Should you have already attended these sessions you are not required to repeat them this semester. This short seminar (1 hour) will be held at the times as posted outside the main Chemistry and Biochemistry office (SP-201.01). The academic code of conduct can be found in section 16.3.14 of the academic calendar in either printed or the online (http://registrar.concordia.ca/calendar/pdf/sec16.pdf) versions. Any form of 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.

How to search the chemical literature:

SciFinder Scholar and Beilstein: The library has access to SciFinder Scholar but Beilstein is another very useful search engine. In both cases, structures or partial structures are drawn and the search engine provides references relating the synthesis or use of the drawn compound. Krista Alexander is willing to provide training on the use of refresher course on the use of SciFinder Scholar, please see me if you are interested.

PARTIAL LIST OF CONCORDIA UNIVERSITY SERVICES…take advantage, they are there for your benefit!

1. Concordia Counselling and Development offers career services, psychological services, student learning services, etc. **http://cdev.concordia.ca/**
2. The Concordia Library Citation and Style Guides: **http://library.concordia.ca/help/howto/citations.html**
3. Advocacy and Support Services: **http://supportservices.concordia.ca/**
4. Student Transition Centre: **http://stc.concordia.ca/**
5. New Student Program: **http://newstudent.concordia.ca/**
6. Access Centre for Students with Disabilities: **http://supportservices.concordia.ca/disabilities/**
7. Student Success Centre: **http://studentsuccess.concordia.ca/**
8. The Academic Integrity Website: **http://provost.concordia.ca/academicintegrity/**
9. Financial Aid & Awards: **http://web2.concordia.ca/financialaid/**
10. Health Services: **http://www-health.concordia.ca/**
11. etc. etc. etc.