Course Description

This course does not rely on an extensive background in organic chemistry nor biochemistry. The intent of the course is to give a broad-based introduction to the field so that you may appreciate the current literature and directions of research in applied nucleic acid chemistry.

Topics include:

- historical development of nucleic acid chemistry,
- modern DNA synthesis (includes some uses for oligonucleotides),
- modern RNA synthesis,
- nucleic acid structure and function and selected methods for studying such,
- small molecule-NA interactions

Sources

Lecture notes will be distributed. As well, references to the appropriate primary literature will be given. The library has the following useful books:

- Principles of nucleic acid structure, Wolfram Saenger, QD433.S24 1984
- DNA structure and function, Richard Sinden, QU58.S615d 1994
- The double helix: a personal account of the discovery of the structure of DNA, James Watson

Evaluation

Evaluation will be based on an oral presentation and accompanying report. The topic will be assigned or by mutual choice with the course instructor. The report and presentation are on the same topic.

Occasionally, as part of the course, but not of the evaluation, questions/problems will be assigned to augment the discussion during lectures or illustrate other important concepts.

- Presentation: 50%
- Report: 50%

Seminar/report topics will be assigned early in the course and are drawn from the recent literature. These topics will complement the material covered during our meetings.

Seminar Format

A 20-ish minute formal presentation (i.e. not a ‘chalk talk’) followed by brief a question period from all the attendees.

Reports

The research report/review/paper will be written on the same topic as the seminar. Please use double spacing, full references and length not to exceed 20 pages, including figures.
The term paper will be graded on such criteria as: general content, organization, focus, detail and description, understanding and scientific insight, analytical approach, and general style (readability). The report cannot be simply your oral presentation slides put together (i.e. it should be essay style).

*I’ll copy all the reports and distribute them as part of the course notes after their evaluation.*

**Timing:**

The course is six weeks maximum. We will meet once a week for 2-to-3 hours for 5 weeks, preferably on Monday’s at 2 pm. A seminar day will be the final meeting, and it will be scheduled for a week (or two) past the last lecture.

**NOTE:**

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:


All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com ([http://www.turnitin.com](http://www.turnitin.com)).

Specifically, in regard to the student report and presentation, students must ensure they properly attribute other’s work.