

Introduction to Nucleic Acid Chemistry C9533S

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 oligodeoxynucleotides),
- modern RNA synthesis (includes some uses for oligoribonucleotides),
- introductory methods for the study of nucleic acid structure and function,
- introduction to selected classes of small molecule-NA interactions (and applications)

Sources

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

- Bioorganic Chemistry: Nucleic Acids, Hecht, S., Ed.; QU58.B61585 1996.
- Nucleic Acids in Chemistry and Biology, Blackburn, M.G.; Gait, M.J., Ed.s; QD433.N83 1996.
- Principles of nucleic acid structure, Wolfram Saenger, QD433.S24 1984
- DNA structure and function, Richard Sinden, QU58.S615d 1994

Easy Reading with historical interest:

- The double helix: a personal account of the discovery of the structure of DNA. James Watson
- The Genetic Code. Isaac Asimov

Evaluation

Evaluation will be based weekly assignments (5 x 10%) and a final test (50%) at the end of the course.

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:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_grad.pdf