

# CHM199H1 S LEC0101 20241: The Context of Chemistry: Origins, Concepts, Tools, and Challenges

Edit

This is a first-year foundations seminar, an idea that is unique to this university. "... a small-group setting that encourages the development of critical thinking, writing skills, oral presentation and research methods...they are an ideal way to have an enjoyable and challenging small-class experience in your first year."

**CLASS MEETING TIME** - W 1-3 pm.

**LOCATION** - SS 1074 Sidney Smith Hall - 1074 ([classfind.com](http://classfind.com)) [Links to an external site.](#)

**ORGANIZATION:** This is a course exclusively for first year undergraduate students in Arts & Science. The class meets in-person. The content (below) includes an introductory set of lectures. After those lectures, students will present individually assigned topics.

**CONTENT:** The ideas and methods of chemistry have been a source of progress and challenges. Many that were developed in the past 150 years influence and affect our lives. We will examine some important ideas and their consequences – how things in chemistry are discovered, invented, tested, rewarded, and honored - as well as misused or misunderstood. For example, aspirin and heroin came from the same company - to relieve pain - but the consequences of each were very different.

**GRADING:** Two presentations in class (in person) 2@25% each. Written assignments (2@20 %). Participation: 10% (This item will be graded at the instructor's discretion). There will be no tests or examinations.

Written assignments will be given after each cycle of student participation. Late submissions will receive an automatic grade reduction (see below).

**TECHNOLOGY:** The use of a portable computer or tablet is essential for doing required presentations in person.

**TEXT** – **The Chemistry Book**, by Derek Lowe, is widely available in stores and on-line, for a reasonable price. Additional reading from material available on the internet will add depth and context beyond the one-page summaries in the text. The book is sold by on-line sellers, including the UT Bookstore, Indigo.ca, and Amazon.ca.

TOPICS:

Pages in text are listed.

GLUCOSE (AND THEN INSULIN) - 182

OXYGEN - 84, 102, 104, 130, 258, 296, 446

TECHNIQUES - 122, 124, 140, 144, 146, 174, 194, 230, 234,246, 256, 266, 298, 314, 324, 338, 346, 358,

374, 378, 386, 396, 338, 342, 362, 374, 378, 386, 396, 398, 426, 436, 450, 464, 474, 498

CLICK REACTIONS AND BIOORTHOGONALITY

PHARMACEUTICALS - 110, 216, 244, 264,290, 292, 330, 332, 340, 344, 360, 366, 394, 438, 442, 460, 466,

476, 480, 494

DNA and PROTEINS - 368, 382, 392, 400, 408, 414, 448, 462

Applied RNA - Ribozymes and m-RNA vaccines 490

MATERIALS - 128, 236, 238, 248, 250, 294, 316, 328, 384, 424, 468, 472

DISASTERS - 418, 470, 478

CO<sub>2</sub> and artificial photosynthesis 512

OFFICE HOURS: Professor Ronald Kluger: Normally MF 11:30-12:30. Please contact by email (r.kluger@utoronto.ca) in advance to confirm or to request an alternative and the method of meeting (phone or video).

## V COURSE POLICIES

- Each member of this course is expected to maintain a:
  - (i) professional and respectful attitude during all course activities, including classes, laboratories, tutorials and online activity.
  - (ii) personal calendar/schedule/organizer to ensure that all course activities are completed, and due dates are met.
  - (iii) collection of notes recorded independently based on concepts covered in course activities (students registered with Accessibility Services requiring a class note-taker will have access to this accommodation)
  - (iv) familiarity with the university policy on Academic Integrity (overleaf)

- The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. As a Course Instructor, I will neither condone nor tolerate behavior that undermines the dignity or self-esteem of any individual in this course and wish to be alerted to any attempt to create an intimidating or hostile environment. It is our collective responsibility to create a space that is inclusive and welcomes discussion. Discrimination, harassment and hate speech will not be tolerated. If you have any questions, comments, or concerns, we encourage you to reach out to the staff in our Equity Offices.
- - Policy for late written assignment submissions - 25% percent deduction for 1-3 day lateness. No later work can be submitted.
- Submission methods: exclusively by uploading to this site.
- Process for requesting re-grading of written course work: Submit a petition with specific requests within one week of receiving the graded paper. Absences for presentations must be rescheduled to receive credit.

## VI TECHNOLOGY REQUIREMENTS

- - This course requires the use of computers, and technical issues are possible. When working on a piece of academic work, students are responsible for scheduling enough time to allow for reasonable delays due to technical difficulties to be overcome, so such issues will not be acceptable grounds for deadline extension. Particularly, maintaining an up-to-date independent backup copy of your work is strongly recommended to guard against hard-drive failures, corrupted files, lost computers, etc.

## VII INSTITUTIONAL POLICIES & SUPPORT

## ACADEMIC INTEGRITY

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters ([governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019](http://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019)) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In general academic work:

1. Falsifying institutional documents or grades.
2. Falsifying or altering any documentation required by the University.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see [www.academicintegrity.utoronto.ca/](http://www.academicintegrity.utoronto.ca/)).

### Plagiarism Detection

*Ouriginal (<https://q.utoronto.ca/courses/46670/pages/integration-plagiarism-detection-tool>) is a very highly recommended tool directly integrated into Quercus that will assist in detecting textual similarities between compared works. Students must be informed at the start of the course that the instructor will be using Ouriginal. If you plan to use this tool, the course syllabus must include the following statement (as is):*

"Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (<https://uoft.me/pdt-faq>[Links to an external site.](#))".

## COPYRIGHT

If a student wishes to copy or reproduce class presentations, course notes or other similar materials provided by instructors, he or she must obtain the instructor's written

consent beforehand. Otherwise, all such reproduction is an infringement of copyright and is absolutely prohibited. Please avoid mis-using copyrighted materials.

### **ACCESSIBILITY NEEDS**

Students with diverse learning styles and needs are welcome in this course. The University of Toronto is committed to accessibility: if you require accommodations for a disability, or have any other accessibility concerns about the course, please contact Accessibility Services as soon as possible.

### **ACCOMMODATIONS FOR RELIGIOUS OBSERVANCES**

Following the University's policies, reasonable accommodations will be made for students who observe religious holy days that coincide with the due date/time of an assignment, tutorial, class or laboratory session. Students must inform the instructor **well before** the session/assignment date to arrange accommodations.

### **ADDITIONAL SERVICES & SUPPORT**

The following are some important links to help you with academic and/or technical service and support:

- General student services and resources at Student Life
- Full library service through University of Toronto Libraries
- Resources on conducting online research through University Libraries Research
- Resources on academic support from the Academic Success Centre
- Learner support at the Writing Centre
- Library support - in-class session

### **ACKNOWLEDGEMENT OF TRADITIONAL LANDS**

We acknowledge origins of the land on which the University of Toronto operates. It was the traditional land of the Wendat (who were displaced by Iroquois around 1630, along with the arrival of European explorers settlers). The Wendat (Now in Quebec [Wendake, Quebec - Wikipedia](#))[Links to an external site.](#) were followed by the Iroquois, Ojibwe, Seneca and, most recently, by the Mississaugas of the Credit River. Today, this is still the home to many Indigenous people from across Turtle Island (the entire continent of North America). We are grateful to have the opportunity to work and to learn on this land.

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