

CHM 1060S: Advanced Topics in Synthetic Organic Chemistry

Spring 2022 Syllabus

I CONTACTS



Course Coordinator

Name: Mark Lautens

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Office: DB359

Lectures: Tuesday 2-4 EST

Online student hours: by appointment through email

Other Instructors

Name: Andrei Yudin

Email: andrei.yudin@utoronto.ca

Office: DB362

Lectures: Tuesday 2-4 EST

Name: Rob Batey

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Office: DB366, LM151

Lectures: Tuesday 2-4 EST

II COURSE OVERVIEW

COURSE DESCRIPTION:

This course will be taught by 3 lecturers (2h x 4 lectures) in the following order:
Lautens, weeks 1-4, Yudin, weeks 5-8, Batey, weeks 9-12

STUDENT LEARNING OUTCOMES:

Students are going to learn fundamentals of catalysis, synthesis and mechanism and be able to apply their new knowledge to interpreting results, devising synthetic routes and devising studies to probe reaction pathways.

PREREQUISITE: CHM 1004 or equiv. (Synthesis of Modern Pharmaceuticals)

This course assumes you have a basic understanding of material taught in previous organic chemistry courses, in particular those involving synthesis.

READINGS:

Required: regular reading of original research papers, review articles and other material provided by the instructor.

Background text: Clayden et al., ORGANIC CHEMISTRY, Oxford Press 2004, ISBN 01985013466

Supplemental readings from: Synfacts, Thieme Verlag

III HOW THE COURSE IS ORGANIZED

The course will include be taught virtually for the first 1/3 and as appropriate based on public health and university guidelines (Tuesday 2-4pm).

COURSE SCHEDULE & RELEVANT SESSIONAL DATES (estimated):

DATES	UNIT/WEEK	TOPICS
Jan. 11-Feb. 1	1 - 4	ML: Non-Linear Effects in Catalysis, Ligand Accelerated Catalysis, Dearomatization Reactions, Metal Catalyzed Domino Reactions
Feb. 9-March 1	5-8	AY: Energetics, Mechanism, FMO, Synthetic Half-Reactions
March 8-March 29	9-12	RAB: Synthesis

IMPORTANT SPRING 2022 SESSIONAL DATES:

Family Day: Monday 20th February 2022

Last Day of class: Tuesday April 5, 2022

IV EVALUATION/GRADING SCHEME

Lautens Section: two assignments. “Synfacts” assignment and short report

Yudin and Batey Sections: term tests, details to be provided

Note: if an unexpected technical issue occurs with a university system (e.g., Quercus services, network outage) that affects availability or functionality, it may be necessary to revise the timing or weighting of the assessments.

V COURSE POLICIES

- I will aim to respond to email within 24 hrs on weekdays and I can be reached for 1:1 office hours via Zoom. Please indicate the course number CHM1060 in the subject line.
- 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. U of T does not condone discrimination or harassment against any persons or communities.
- Privacy language and appropriate use of course materials:
<https://teaching.utoronto.ca/ed-tech/audio-video/sample-statements/>
- Deadlines for assignment submissions and late policy (e.g. 50% will be deducted daily).
- There will be no make-up tests or assignments. If you are ill during the slot assigned to your oral exam, an effort will be made to reschedule within 48 of the originally assigned time. Otherwise the course will be reweighted, as will be the case for missed term tests.

VI TECHNOLOGY REQUIREMENTS

Specific guidance from the U of T Vice-Provost, Students regarding student technology requirements is available here:

<https://www.viceprovoststudents.utoronto.ca/covid-19/tech-requirements-online-learning/>

Advice for students more broadly regarding online learning is available here:

<https://onlinelearning.utoronto.ca/getting-ready-for-online/>

This course requires the use of computers, and of course sometimes things can go wrong when using them. You are responsible for ensuring that you maintain regular backup copies of your files, use antivirus software (if using your own computer), and schedule enough time when completing an assignment to allow for delays due to technical difficulties. Computer viruses, crashed hard drives, broken printers, lost or corrupted files, incompatible file formats, and similar mishaps are common issues when using technology, and are not acceptable grounds for a deadline extension.

VII INSTITUTIONAL POLICIES AND SUPPORT

ACADEMIC INTEGRITY

On 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 (<https://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 papers and assignments:

1. Using someone else's ideas or words without appropriate acknowledgement.
2. Submitting your own work in more than one course without the permission of the instructor.
3. Making up sources or facts.
4. Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

1. Using or possessing unauthorized aids.
2. Looking at someone else's answers during an exam or test.
3. Misrepresenting your identity.

In 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 <https://www.academicintegrity.utoronto.ca/>).

Use of Turnitin

Normally, students will be required to submit their assignment to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their work to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.

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Note for instructor: *sample statements for instructor recording of online courses are available here:* <https://teaching.utoronto.ca/ed-tech/audio-video/sample-statements/>

If a student wishes to copy or reproduce lecture 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. More information regarding this is available here: <https://teaching.utoronto.ca/ed-tech/audio-video/copyright-considerations/>

ACCESSIBILITY NEEDS

Students with diverse learning styles and needs are welcome in this course and my assessment methods aim to offer an opportunity for all students to excel. 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.

ADDITIONAL SERVICES and 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](#)
- Information for [Technical Support/Quercus Support](#)