

# Chemistry 2273A 2022: Organic Chemistry I: STRUCTURE AND SPECTROSCOPY

Instructor:	Dr. James A. Wisner	ChB 215
Class Times	Mon., Wed., Fri.	11:30-12:20 NCB-117
Office Hours:	After each lecture and open door policy (but email to be sure I am available)	

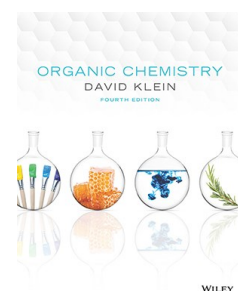
Course Web-Page: <https://owl.uwo.ca/portal>

Course E-mail: [jwisner@uwo.ca](mailto:jwisner@uwo.ca)

When sending email to this account use "2273" to start the subject line. Emails from registered students emanating from @uwo.ca accounts will be answered as soon as possible, in class, or something will be posted on OWL.

**Required Materials, Text and other Purchases:** Available in the bookstore

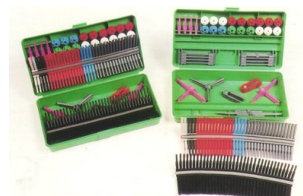
- **TEXT:** "Organic Chemistry" by David Klein 4<sup>th</sup> Edition Binder Ready Version with Student Study Guide (e-version) and WileyPLUS LMS Card  
ISBN 9781119832614 \$154.95
- This is a binder ready version with electronic resources that also gives access to the electronic version of the text.



**Note:** This text will be used for Chem 2283g and as a text/resource in Chem 3373

Chemistry 2273a will cover approximately chapters 1-7, 14, 15 and smattering from a couple of other chapters. Chemistry 2283g covers material from the rest of the text.

- Recommended: Darling Molecular Model Set
- Hayden-McNeil Student Lab Notebook. How best to use this book is discussed in the Laboratory Manual (see below). This book may be shared with other lab courses- like 2283G.
- Safety Glasses with side-panels and laboratory coat. (**required**, but you should already have them!)
- Fall 2022 Laboratory Manual. To be purchased separately.



**Evaluation:** The final grade for the course will be determined by the following:

Laboratory Mark	(6 In-person Labs (#1, 2A, 2B, 3A, 3B, 4) + #5 (Online))	15%
Term Test of Knowledge 1, Saturday October 15 <sup>th</sup>	12 – 1:30pm	20%
Term Test of Knowledge 2, Saturday, November 12 <sup>th</sup>	12 – 1:30pm	20%
Final Test of Knowledge, <b>cumulative</b> ;	3 hours, time and location set by Registrar	45%

No electronic devices besides calculators will be allowed on tests or exams.

- You must:**
- 1) achieve a passing grade in the labs (7.5/15)
  - 2) complete at least 5 of 7 laboratory sections, whether excused or not, (6 In-person Labs (#1, 2A, 2B, 3A, 3B, 4) + #5 (Online)) including reports.
  - 3) achieve a grade of 42.5/85 on the total of three Test of Knowledge assessments to pass the course.

**If these conditions are NOT met a final grade of 40% (or lower) will be assigned.**

## Accessibility Statement

Please contact the instructor if you require information in an alternate format, or if any other arrangements are needed to make this class accessible to you. Advance notice of planned interruptions will be made in class and by e-mail to @uwo.ca accounts. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

## Rough Lecture Topic Outline:

Material to be included on Term Test of Knowledge 1: Chapters 1-5

Material to be included on Term test of Knowledge 2: Chapters 14, 15

Material to be included on the Final Test of Knowledge: All of above + Chapters 6 and 7 (not including Eliminations)

**Learning Outcomes.** Develop an understanding of organic chemical structure and stereochemistry. Relate the structure of organic compounds to stability, acidity, and basicity. Begin to develop the ability to use spectroscopic techniques (IR and NMR spectroscopy) and Mass Spectrometry to elucidate the structure of organic compounds from spectra. Begin to understand how to show electron movement and arrow pushing to predict the reactions of organic compounds by looking at nucleophilic and elimination reactions. In the laboratory you will learn techniques for chemical separation and purification, how to set up and monitor a simple chemical reaction chemically and with spectroscopy. You will develop the skills to keep proper records in a lab book.

## Laboratory Schedule

**All Labs are carried out in the Chemistry Building Room ChB 074 (lower ground floor). You must attend the laboratory section to which you are registered. If you miss a laboratory, you must see your TA or Prof. Wisner for alternative arrangements as soon as possible after missing the lab.**

**Laboratory Director:** Dr. Chris Levy ChB 117

## Laboratory Teaching Assistants (TAs) for Chem 2273

Priyanka Jagadeesa Prabhu  
Zi Wang  
Mohammad Yasir Attaelmanan  
Paul Winiarz

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[pwiniarz@uwo.ca](mailto:pwiniarz@uwo.ca)

**To reach your TA by email, please indicate 2273 in the subject line.**

**NOTE:** If you go looking for your TA, you are not permitted to enter research labs unless you are masked, properly attired and are wearing safety glasses. These are working labs and with hazardous environments, use caution!

Week of	Experiment
Sept. 12	Exp. 1: Introduction to the Laboratory
Sept. 19	Exp. 2, Part A: Liquid-Liquid Extraction
Sept. 26	<b>No Lab</b>
Oct. 3	Exp. 2, Part B: Recrystallization
Oct. 10	<b>No Lab</b>
Oct. 17	Exp. 3, Part A: Thin Layer Chromatography
Oct. 24	<b>No Lab</b>
Oct. 31	<b>Fall Reading Week – No Lab</b>
Nov. 7	Exp. 3, Part B: Column Chromatography
Nov. 14	<b>No Lab</b>
Nov. 21	Exp. 4: Alkyl Halides
Nov. 28	Exp. 5: Spectroscopic Identification. ONLINE

**All lab reports are submitted electronically.**

**Please use the Hayden-McNeil Organic Chemistry Laboratory Notebook for in-lab experiments.**

## **Important Notes Regarding Your Evaluation and Your Responsibilities in this Course:**

### **1) Prerequisite:** A Mandatory Notice from the Registrar:

*"Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites."*

*Prerequisites: Chem 1301A and 1302B (or equivalent) with a minimum mark of 60%.*

### **2) Missed Work: Midterm Test or Exam**

Failure to write a midterm test or final exam will result in a zero grade in that assessment, unless a valid excuse has been filed with the **Dean's Office**. It is the student's responsibility to ensure that medical slips, etc. are filed with the **Dean's Office** and that a copy is sent to your instructor (not your laboratory demonstrator).

*Note 1: If a midterm test is missed for valid reasons, the % will be transferred to the final examination. There are NO alternate midterm tests.*

*Note 2: If the final exam is missed for valid reasons, a Special Exam (SPC) may be requested through the Dean's Office. By University regulation, the SPC will be written on the University approved day.*

*Note 3: You must write the final exam as a minimum requirement to be awarded a passing grade in the course.*

*If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted via the Dean's Office/Academic Counselling unit of your Home Faculty. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in NCB 280, and can be contacted at scibmsac@uwo.ca. For further information, please consult the university's policy on academic consideration for student absences:*

*[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Consideration\\_for\\_absences.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf). It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the **Dean's Office** immediately. For further information please see: <http://www.uwo.ca/univsec/handbook/appeals/medical.pdf>*

Students wishing accommodation for religious, athletic or other special circumstances should consult with the Instructor well in advance of the date in question.

**3)** It is the policy of this department that when a student takes a test or examination, they have deemed themselves fit to do so. Claims of distress or medical issues *after the fact* will not be considered for the basis of a grade appeal.

### **4) Missed Work: Laboratory**

Failure to complete a laboratory experiment, including the report, will result in a zero grade for the laboratory and potentially jeopardize completion of the course, unless a valid excuse has been filed with the **Dean's Office**. It is the student's responsibility to ensure that medical slips, etc. are filed with the **Dean's Office** and that a copy is sent to your instructor (not your laboratory demonstrator). Once notified by the Dean's office the instructor will make the appropriate accommodation, such accommodation must be sought in a timely manner by the student.

**The weight of the missed laboratory will be distributed among the remaining laboratory evaluations.**

**You must complete 5 of 7 laboratory sections (of 6 In-person Labs (#1, 2A, 2B, 3A, 3B, 4) + #5 (Online)) to pass the course.**

**5) Policy on late work:** Laboratory reports have set due dates. A piece of work will not be accepted (that is, it will be given a grade of zero) if it is more than one week late or if graded work has already been returned to the class, whichever is first. Otherwise, laboratory reports will lose 10% per day past the due time/date.

**7) Plagiarism and Cheating:** Chemistry 2273a has a ZERO tolerance for plagiarism and cheating. Cases of cheating or plagiarism may result in a zero grade for Chemistry 2273a and the individual will be reported to the Chair and the Dean who may administer further sanctions.

Plagiarism is a major academic offence. 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/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

Students must write their laboratory reports and tests on their own and in their own words and without collaboration unless explicitly allowed by the Instructor. Whenever students take an idea, or a passage from another author or student, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations.

*Whenever possible, tests and exams may be checked with software that checks for unusual coincidences in answer patterns that may indicate cheating.*

**8) Attendance:** Students are expected to attend course lectures and participation in the class is considered to be an integral and essential component of the course. Poor attendance can result in a student being barred from writing the exam following procedures provided in the academic calendar.

A complete listing of your Academic rights and responsibilities may be found on the Registrar's and associated websites, starting at:

**<http://www.westerncalendar.uwo.ca/>**

### **General Information**

Students who are in emotional/mental distress should refer to Mental Health@Western ([http://www.health.uwo.ca/mental\\_health](http://www.health.uwo.ca/mental_health)) for a complete list of options about how to obtain help.

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.

This course is supported by the Science Student Donation Fund. If you are a BSc or BMSc student registered in the Faculty of Science or Schulich School of Medicine and Dentistry, you pay the Science Student Donation Fee. This fee contributes to the Science Student Donation Fund, which is administered by the Science Students' Council (SSC). One or more grants from the Fund have allowed for the purchase of equipment integral to teaching this course. You may opt out of the Fee by the end of September of each academic year by completing the online form linked from the Faculty of Science's Academic Counselling site. For further information on the process of awarding grants from the Fund or how these grants have benefitted undergraduate education in this course, consult the chair of the department or email the Science Students' Council at [ssc@uwo.ca](mailto:ssc@uwo.ca).