Welcome to Chem 1302B! Please read and keep this course outline handy, because it is an official document that contains important course information.

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Course Description & Prerequisite Requirements

Calendar Description: An examination of how the fundamentals of energetics influence chemical processes. Topics include: gases, thermodynamics and thermochemistry, chemical equilibria, solubility, weak acids and bases, electrochemistry, and chemical kinetics.

Prerequisite: Grade 12U Chemistry (SCH4U) or equivalent. Grade 12U Advanced Functions (MHF4U) or Calculus & Vectors (MCV4U), or Mathematics 0110A/B or 0105A/B, is strongly recommended.

Antirequisites: The former Chem 1024A/B.

Extra Information: 3 lecture hours, 1.5 laboratory hours (3 hours every other week).

Important: Students repeating the course must repeat the lab component. There are no exemptions.

Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may 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.

Teaching Team & Email

Four course instructors, a lab coordinator, a counselling assistant, and several dozen teaching assistants (TAs) contribute to this course and are here to support your learning.

<table>
<thead>
<tr>
<th>Instructors</th>
<th>Office Location</th>
<th>In-Person Lecture Times*</th>
<th>In-Person Lecture Location*</th>
<th>Lecture Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Jamie Noel</td>
<td>CHB 20</td>
<td>MWF 9:30 am – 10:20 am</td>
<td>NS-145</td>
<td>002</td>
</tr>
<tr>
<td>Dr. Yang Song</td>
<td>CHB 22</td>
<td>MWF 10:30 am – 11:20 am</td>
<td>NS-145</td>
<td>003</td>
</tr>
<tr>
<td>Dr. Zhifeng Ding</td>
<td>MSA 0203</td>
<td>MWF 12:30 pm – 1:20 pm</td>
<td>NS-145</td>
<td>004</td>
</tr>
<tr>
<td>Dr. Christina Booker*</td>
<td>CHB 21</td>
<td>MWF 1:30 – 2:20 pm</td>
<td>NCB-101</td>
<td>005</td>
</tr>
</tbody>
</table>

*Course Coordinator

Email should only be used for administrative purposes. Emails are triaged during regular business hours and answered in the order of importance. In order to allow your Chem 1302B team to respond to administrative concerns as quickly as possible, please do not send emails containing:

- Questions that can be answered based on the information found in this course outline. Refer to the course outline first.

Use this one common email for the course: [chem1302@uwo.ca](mailto:chem1302@uwo.ca)
• Questions about course material. Such questions should be taken to the Resource Room or posted on the OWL forum.

• Requests for grade increases, extra assignments, make-up labs, etc. Refer to the section below entitled Equal Opportunity and Evaluation Policy first.

Use your @uwo.ca email address for all components of this course (including email and accounts for the Hayden-McNeil lab site, iClicker, and Mastering Chemistry)

If you email us, you must use your Western email address and include Chem 1302B in the subject line. Please only email chem1302@uwo.ca and do not copy additional instructors/coordinators on this email, as we will then assume your message has been answered by someone else. Messages from a non-Western account or those that do not include Chem 1302B may be blocked by the university’s anti-spam system. It is also useful to include your student number and section number in your message.

Constructive feedback is very valuable to us. Please contact us if you have any comments or feedback on Chem 1302B. We are always trying to improve the course so that you can have a great learning experience!

**Dates to Note**

<table>
<thead>
<tr>
<th>Dates</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, January 10th, 2022</td>
<td>Course begins!</td>
</tr>
<tr>
<td>Tuesday, January 18th</td>
<td>Last day to add a second-term half course OR make changes to lab section enrolment.</td>
</tr>
<tr>
<td>Thursday, January 13th</td>
<td>First Mastering Chemistry assignment opens and is due 11:55 pm on Wednesday, January 26th.</td>
</tr>
<tr>
<td>Wednesday, January 19th</td>
<td>Last day to enrol in the Hayden-McNeil lab site for access to the first lab.</td>
</tr>
<tr>
<td>Friday, January 21st</td>
<td>OWL Intro Quiz due by 11:55 pm.</td>
</tr>
<tr>
<td>Monday, January 24</td>
<td>Lab #1 opens online.</td>
</tr>
<tr>
<td>Saturday, February 12th</td>
<td>Midterm Test, 2:00 – 4:00 pm (Locations TBA).</td>
</tr>
<tr>
<td>Monday, March 14th</td>
<td>Last day to drop the course without academic penalty.</td>
</tr>
<tr>
<td>Friday, March 11th</td>
<td>OWL Reflection Activity due by 11:55 pm.</td>
</tr>
</tbody>
</table>

**Course Website**

Course updates will be posted on OWL (http://owl.uwo.ca), Western’s learning management system. You are responsible for checking OWL on a frequent basis. You will find lecture notes posted after in-person class, solutions to practice problems from the workbook, and answer keys to the practice exams. When Western’s classes are announced to be online, lectures will be offered asynchronously on OWL.
Learning Outcomes

The course has an emphasis on the development of skills such as critical thinking, problem solving, analysis, and quantitative reasoning; these transferrable skills are essential to success in not just chemistry but also in other courses and many occupations. Any student receiving credit for Chem 1302B will be expected to demonstrate competence in his or her ability to:

<table>
<thead>
<tr>
<th>Discipline-Specific Outcomes</th>
<th>Transferrable-Skill Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the importance of chemistry in everyday life and the interdisciplinary nature of chemistry.</td>
<td>Analyze and critically assess problems, and take a systematic approach to solve them.</td>
</tr>
<tr>
<td>Use critical thinking skills to explain, make connections between and apply chemical principles, laws, and theories pertaining to ideal gases, thermodynamics, chemical equilibria, electrochemistry, and chemical kinetics.</td>
<td>Obtain, evaluate, and integrate information from various sources, and determine its relevance.</td>
</tr>
<tr>
<td>Evaluate and assess chemical data and explain how they relate to chemical theories/laws.</td>
<td>Work with others in an effective, practical, social, and ethical manner.</td>
</tr>
<tr>
<td>Apply chemical theories or laws to solve a variety of new qualitative and quantitative chemical problems.</td>
<td>Prioritize a set of tasks and manage the use of your time.</td>
</tr>
<tr>
<td>Conduct laboratory experiments and draw conclusions from collected experimental data and results.</td>
<td>Execute mathematical calculations accurately.</td>
</tr>
<tr>
<td>Safely use a variety of laboratory equipment and instrumentation to perform experimental procedures and explain the underlying theory behind all of them.</td>
<td>Communicate thoughts, ideas, and observations verbally and in writing.</td>
</tr>
<tr>
<td></td>
<td>Recognize when to seek assistance.</td>
</tr>
<tr>
<td></td>
<td>Develop respect for, and comply with, regulations and policies.</td>
</tr>
<tr>
<td></td>
<td>Accept responsibility for your decisions, actions, and non-actions.</td>
</tr>
</tbody>
</table>

Learning Support: Resource Room, OWL Forum, & Office Hours

The Resource Room provides you with an informal environment to ask questions related to the course content. Discuss any questions or concerns on course theory or practice problems with a qualified teaching assistant (TA). Resource Room sessions for lab-based questions will also be available. The schedule for these drop-in sessions will be posted weekly on OWL. You can attend these sessions in-person in MSA 1205 or online via Zoom (via the Zoom tab on OWL), as noted in the schedule, and as COVID guidelines permit.

You are also welcome to post your questions to the OWL Forum. Note that lab-based questions should asked during the lab or the lab-specific Resource Room sessions.

The Resource Room and the OWL Forum are your primary source of help with course material. Course instructors will have office hours to meet with students, scheduled by appointment, but this time should
be used for all matters other than the course material itself. Email chem1302@uwo.ca if you wish to book an appointment.

Before considering a tutor, check out the free help in the Resource Room! Private, third-party review or tutor services are not affiliated with, or endorsed by, the university. As such, the university cannot be responsible for any of the content they provide, even if the content causes you to answer exam questions incorrectly. Because of liability reasons, your instructors are not permitted to suggest or recommend any specific tutors.

Students should realize that they may not hire tutors who are Chemistry 1302B teaching assistants, even if they are not from your own lab section. This is a serious legal matter pertaining to conflict of interest. If you are ever in doubt, please do not hesitate to ask your instructor.

Course Materials

In order for you to obtain the best possible learning experience in Chem 1302B, all of the materials described below are required and can be found at the Western Bookstore. Western Bookstore operations updates can be found here: https://bookstore.uwo.ca/operations-updates.

Chemistry 1302B Course Workbook, 2021-22 edition
- This workbook was designed by faculty in the Department of Chemistry with you and your learning in mind. This is the textbook and lecture note set for our course and is only available in paper format.
- All classes and assessment activities will be based on this year’s edition. We recommend that you read the relevant topics prior to class/online lesson, and bring your workbook with you to class/online lesson.

- This purchase will give you the paper copy of the lab manual and past exams, as well as digital access to the Hayden-McNeil lab course site. All submissions related to the lab will take place on the Hayden-McNeil site.
- In order to complete the first lab, you must use the code provided in your lab manual and enroll on the Hayden-McNeil lab site by Wednesday, January 19th.

Mastering Chemistry Access Code
- Use this code to access the 9 online assignments.
- If you have already purchased a Mastering Chemistry code this academic year for Chem 1301A, then you already have access to these assignments. Simply link your existing account to the new course code, following the instructions provided on OWL.
- If you did not take Chem 1301A this year, the access code can be purchased at the Western Bookstore. (Don’t purchase this directly online!) Once you have purchased your code, follow the registration details provided on OWL.
**Lab Coat & Safety Glasses**

- For your protection, safety glasses and a lab coat are required for the labs. Scrubs or “consultation coats” are not acceptable because they are too short, do not offer enough protection, or are not sufficiently fire-resistant.
- You are welcome to bring ones that you already own.
- Safety glasses can alternatively be purchased from Western’s Chem Club and details will be provided on OWL.

**Sharp EL-510 Series Scientific Calculator**

- In order to ensure fairness for everyone in the course, only the Sharp EL-510R, EL-510RN, EL-510RT, or EL-510RTB calculator models are permitted in the labs and during tests and exams. No other calculators are permitted.

**Web-Enabled Device**

- A phone, tablet, laptop or other web-enabled device will be used for the iClicker component during in-person lectures or during online lessons. You can use Western’s WiFi with your Western credentials when on campus.
- If lectures and/or exams are required to be delivered online, you will need a working computer, webcam, and a reliable internet connection.
Course Topics

<table>
<thead>
<tr>
<th>Estimated Start Date</th>
<th>Workbook Chapter</th>
<th>Lecture Topic</th>
<th>Inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 10</td>
<td></td>
<td>Welcome &amp; Introduction</td>
<td></td>
</tr>
<tr>
<td>January 12</td>
<td>1.1</td>
<td>Gases</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.2</td>
<td>Ideal Gas Law</td>
<td></td>
</tr>
<tr>
<td>January 19</td>
<td>2.1</td>
<td>Heat, Work, and Energy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.2</td>
<td>Enthalpy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.3</td>
<td>Entropy and Spontaneity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.4</td>
<td>Free Energy</td>
<td></td>
</tr>
<tr>
<td>February 2</td>
<td>3.1</td>
<td>Equilibrium</td>
<td>Midterm</td>
</tr>
<tr>
<td></td>
<td>3.2</td>
<td>Solubility of Ionic Compounds</td>
<td>Final Exam</td>
</tr>
<tr>
<td>February 19-27</td>
<td><em>Reading Week</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.3</td>
<td>Weak Acids and Bases</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.4</td>
<td>Buffers and Titrations</td>
<td></td>
</tr>
<tr>
<td>March 14</td>
<td>4.1</td>
<td>Redox Reactions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.2</td>
<td>Redox Potential and Voltaic Cells</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.3</td>
<td>Electrolytic Cells</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.4</td>
<td>Batteries</td>
<td></td>
</tr>
<tr>
<td>March 28</td>
<td>5.1</td>
<td>Rate and Rate Laws</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.2</td>
<td>Arrhenius Equation and Reaction Mechanisms</td>
<td></td>
</tr>
</tbody>
</table>

In all of the topics, the primary focus is on the understanding and application of the concepts. Please try to garner a thorough, in-depth understanding of the material, because that is what allows success in chemistry. Accordingly, tests and exams will be designed to evaluate your comprehension of the material and your ability to apply it to new and different scenarios, and not simply your ability to regurgitate memorized facts or substitute numbers into formulas.

Common Concerns

The table below provides a list of common student concerns and how they are to be addressed. If your concern is not listed here, please check the OWL forum.
<table>
<thead>
<tr>
<th>Concern</th>
<th>How to Address Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mastering Chemistry Assignments</strong></td>
<td>For technical issues (access, account, registration, etc.) review the PDF provided on OWL, then reach out to Pearson Support for help: <a href="https://support.pearson.com/getsupport/s/contactsupport">https://support.pearson.com/getsupport/s/contactsupport</a> If you believe that there is a content error with a question, please email <a href="mailto:chem1302@uwo.ca">chem1302@uwo.ca</a> and include the question name/title, a brief explanation of your concern, and a complete screenshot of the question. Assignment questions may not be posted on OWL.</td>
</tr>
<tr>
<td>All lab-related matters</td>
<td>Ask your lab TA if you are in the lab. Otherwise, visit the Lab-Based Resource Room. If your concern remains, visit the lab coordinator, Dr. Naeem Shahid, in MSA 1235. If the coordinator is unable to resolve your concern, appeal in writing by emailing Dr. Ding at <a href="mailto:chem1302@uwo.ca">chem1302@uwo.ca</a> For technical support with the Hayden-McNeil lab site, please visit: <a href="https://macmillan.force.com/macmillanlearning/s/contactsupport">https://macmillan.force.com/macmillanlearning/s/contactsupport</a></td>
</tr>
<tr>
<td>Course content question</td>
<td>Visit the Resource Room or post your question to the OWL Forum.</td>
</tr>
</tbody>
</table>

**Laboratory Information**

**Schedule and Location**

This course includes four lab experiments. Lab #1 will only be offered online, while Labs #2-4 are expected to be delivered in-person, as Western University and COVID-19 protocols dictate. If Lab #2, #3, or #4 must pivot to online, an OWL announcement will be sent at least 1 week prior to the start of the lab to inform you of this change.

The laboratory section in which you are registered is the only in-person section that you may attend. Your lab section number can be found on your current timetable on Student Centre. You will need this lab section to enroll on the Hayden-McNeil lab site and determine the date of your lab, so look it up!

The date on which you will be doing your in-person lab depends on your lab section. Every course has its own lab schedule, so do not assume that your chemistry lab schedule will follow another course’s schedule. Missed labs will result in a mark of zero unless academic consideration has been granted.

Chem 1302B in-person labs are held in five locations. The location where you will be performing your labs will be posted on **OWL PostEm** by the evening of Friday, February 4. The possible locations include: Zones A, B, C, and D of Materials Science Addition 1220, and Chemistry Building 110.
<table>
<thead>
<tr>
<th>Experiment</th>
<th>Lab Components Open Online</th>
<th>Lab Held (Lab Section ends in 1, 3, or 5)</th>
<th>Lab Held (Lab Section ends in 2, 4, or 6)</th>
<th>All Lab Components Due*</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Calorimetry of Reactions and Heat Transfer</td>
<td>January 24, 9:00 am</td>
<td>Online only</td>
<td>February 4, 11:55 pm</td>
<td></td>
</tr>
<tr>
<td>#2 Determination of an Equilibrium Constant</td>
<td>February 4, 9:00 am</td>
<td>Week of February 7</td>
<td>Week of February 14</td>
<td>March 4, 11:55 pm</td>
</tr>
<tr>
<td>#3 Spectrophotometric Determination of the Ka and Concentration of Bromocresol Green</td>
<td>February 18, 9:00 am</td>
<td>Week of February 28</td>
<td>Week of March 7</td>
<td>March 18, 11:55 pm</td>
</tr>
<tr>
<td>#4 Redox Analysis of Iron Supplements</td>
<td>March 11, 9:00 am</td>
<td>Week of March 14</td>
<td>Week of March 21</td>
<td>April 1, 11:55 pm</td>
</tr>
</tbody>
</table>

*Pre-lab exercise must be completed online prior to your lab experiment. Proof of completion must be shown upon entering any in-person lab.

**Preparation and Report Submission for Lab Experiment**

Before completing the first experiment, enrol in the Hayden-McNeil Lab Site, complete the safety contract on the Hayden-McNeil site, and read the Safety Regulations, Introduction, and Significant Figures sections of the lab manual, as indicated in the flow chart below.
Prior to *first* lab:

- Enroll in the Hayden-McNeil Lab Site. (Use code in lab manual)
- Complete lab conduct agreement.
- *Shaded boxes indicate components completed online via the Hayden-McNeil lab site.*

For *each* online lab:

- Read Background, Strategy & Procedure sections in your lab manual.
- Submit Pre-Lab activity.
- Watch the provided demonstration videos.
- Submit Post-Lab activities.
  1. Complete the Smart Worksheet using the provided data.
  2. Upload a PDF snapshot of your worksheet from your lab manual.

For *each* in-person lab:

- Read Background, Strategy & Procedure sections in your lab manual.
- Submit Pre-Lab activity. (Bring proof of completion to your lab)
- Attend your in-person lab. Record your data on your data sheets in your lab manual.
- Submit Post-Lab activities.
  1. Complete the Smart Worksheet using your data.
  2. Upload a PDF snapshot of your worksheet from your lab manual.

Prior to *each* experiment, read the Background, Experimental Strategy, and Experimental Procedure in your lab manual, and solve and submit your Pre-Lab on the Hayden-McNeil site. For in-person labs, bring proof of this online completion to your lab.

Lab reports include the Pre-Lab activity (submitted online prior to your lab experiment) and Post-Lab activities (submitted online after your lab experiment). The Post-Lab activities consist of using your own data (or provided data, if lab is only offered online) from your lab experiment to complete the online Smart Worksheet and uploading a PDF of your Lab Manual Worksheet. The Post-Lab activities must be submitted/uploaded prior to the due dates provided in the table above. All lab components must be submitted through the Hayden-McNeil lab site.

You are encouraged to submit your lab report components well in advance of the due date. No special considerations will be granted due to your internet, website, or other technical issues, so start early! **Only one submission attempt is possible.** Second-attempt requests will not be granted without academic consideration.

You may only submit Post-Lab activities for in-person labs if you have attended the lab session. Submission of any Post-Lab activities without lab attendance for in-person labs would be considered a fraudulent assignment and may be investigated in accordance with the Western’s policy on scholastic offences.
Lateness Policy for In-Person Labs

Students who arrive after the doors to the lab have closed, when the “TA talk” begins, will be considered late and will not be permitted to do the experiment. A mark of zero will be assigned for that experiment.

Safety and Dress Code for In-Person Labs

Western is committed to workplace health and safety, and has strict safety regulations. Lab TAs and staff will remove students who, in their opinion, do not meet the safety requirements or are not prepared. These students, like those who arrive late, will not be permitted to do the experiment, and thus will receive a grade of zero for their smart worksheet and worksheet upload.

Safety glasses or goggles must be worn whenever you are in the laboratory. Students who wear prescription glasses must wear appropriate safety glasses or goggles designed to fit over their regular glasses. If you wear contact lenses, you must inform the lab TA that you are wearing contact lenses.

Western mandates “shoulder-to-toe” coverage. Details are found in the lab manual. For hygienic reasons, shoes, socks, pants, lab coats, and safety glasses are not available for rent.

Everyone must wear a buttoned-up lab coat at all times in the laboratory. Everyone must wear ankle-length pants, socks that cover the ankle, and shoes that cover the whole foot (top, sides, and back) without any mesh areas or “cutout holes.” Shorts, sandals, and capris are among the items of clothing that are not acceptable. No skin may show at the ankles even when you are seated. Pants with rips or tears, or leggings with mesh panels, are not acceptable.

Evaluation Components

Tests and exams are necessary to assess your mastery of core concepts. Your overall course grade, out of 100, will automatically be the higher of the two grades calculated by the two methods shown below.
<table>
<thead>
<tr>
<th>Component</th>
<th>Notes</th>
<th>Method #1 Weight (%)</th>
<th>Method #2 Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OWL Intro Quiz</td>
<td>Due Friday, January 21 at 11:55 pm on OWL. This activity will help you become familiar with the course. You will have 5 attempts and must earn 75% to obtain this 1% towards your course grade.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>OWL Reflection Activity</td>
<td>Due Friday, March 11 at 11:55 pm on OWL. This activity will guide you through a reflection of your learning. You will have 5 attempts and must earn 75% to obtain this 1% towards your course grade.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mastering Chemistry Assignments</td>
<td>Nine online assignments. Your best eight assignments will be used for this component.</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Laboratory</td>
<td>Four experiments (4% each).</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>iClicker</td>
<td>iClicker questions will be posed during in-person lectures and/or posted online during online learning weeks. Questions are marked for participation only. The score you receive will be based on the percentage of iClicker questions you answer:</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>≥ 80% = 5</td>
<td>50-59% = 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>70-79% = 4</td>
<td>40-49% = 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60-69% = 3</td>
<td>&lt; 40% = 0</td>
<td></td>
</tr>
<tr>
<td>Midterm Test</td>
<td>Saturday, February 12, 2:00 – 4:00 pm</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Registrar-scheduled, 3.00 hours</td>
<td>43</td>
<td>50</td>
</tr>
</tbody>
</table>

**Requirements for Passing Chem 1302B**

To obtain credit for the course, all four requirements below must be met:

1. Obtain a minimum overall course grade of 50%.
2. Obtain a minimum of 40% on the Final Exam.
3. Obtain a minimum of 50% on the laboratory component (8.00/16.00). This mark is calculated from all four experiments. A missed experiment is assigned a mark of zero unless it has been “excused” (see section on Missed Course Components.)
4. Miss no more than two experiments, whether excused or not.

**Mastering Chemistry Assignments**

This online assignment platform is designed to help you increase your understanding of core concepts and problem-solving skills. Completing these assignments *independently* will help you to master your understanding of the course content.

Registration information to link your account to our course will be posted on OWL. The email address used for your *Mastering Chemistry* account must be your @uwo.ca email address. If you do not use your @uwo.ca email address, you will receive a mark of zero on this component of the course.
This course includes 9 assignments, but only the best 8 will be used to calculate your mark. Assignment release dates and due dates are provided in the table below. Each assignment will consist of ~15 questions.

<table>
<thead>
<tr>
<th>Assignment Number</th>
<th>Workbook Topics Covered</th>
<th>Available Thursday 9:00 am</th>
<th>Due Wednesday* 11:55 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>January 13</td>
<td>January 26</td>
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<tr>
<td>2</td>
<td>2.1 and 2.2</td>
<td>January 27</td>
<td>February 2</td>
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<td>3</td>
<td>2.3 and 2.4</td>
<td>February 3</td>
<td>February 9</td>
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<td>4</td>
<td>3.1 and 3.2</td>
<td>February 10</td>
<td>March 2</td>
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<td>3.3</td>
<td>March 3</td>
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<td>March 10</td>
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<td>4.1 and 4.2</td>
<td>March 17</td>
<td>March 23</td>
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<tr>
<td>8</td>
<td>4.3 and 4.4</td>
<td>March 24</td>
<td>March 30</td>
</tr>
<tr>
<td>9</td>
<td>5.1 and 5.2</td>
<td>March 31</td>
<td>April 8*</td>
</tr>
</tbody>
</table>

*Assignment #9 is due on a Friday, the last day of the term.

If you run into any technical issues, please contact Pearson using the contact info provided on OWL and not your instructor. It is recommended that you provide yourself with ample time to complete the assignment in the event of technical issues. Specifically, do not wait until the day it is due to start it.

If you think there is an error with a question, please email chem1302@uwo.ca and include the question name/title, a brief explanation of your concern, and a complete screenshot of the question.

**iClicker**

In order to receive credit for the iClicker component, you must:

- Create a free iClicker account using your Western email address. Please refer to the instructions at https://presswestern.uwo.ca/ and on OWL. For initial online learning, add Chem1302B ONLINE. For in-person learning, add your section of Chem 1302B to your iClicker account. If you already have an iClicker account, please go into the settings and verify that it uses your @uwo.ca email address.
- For **in-person classes**, attend, and answer iClicker questions in, the lecture section in which you are registered. Questions answered in the incorrect lecture section may not count towards the total number of questions that you answer.
- For **online lesson weeks**, respond to the posted iClicker questions in the open iClicker assignment. New assignments with summary questions will be available each week for online
engagement. During weeks of online classes, you are encouraged to complete the iClicker questions while working with a small group of classmates over Zoom. Note that extended due date versions of these assignments will be available to all students, but you only need to complete ONE version of each assignment by the end of the term to meet the completion expectation. (You are welcome to complete more than one version of each assignment, but bonus grades will not be granted.)

- If your web-enabled device is not working properly, try refreshing the page or restarting the app. It is your responsibility to ensure that your device is working properly.
- Your final iClicker component score will be calculated according to the percentage of questions (both in polls and in assignments) that you respond to, as indicated in the Evaluation table above. This evaluation scheme is designed to account for occasional technical issues or absences.

Midterm and Final Exam

The midterm test and final exam are multiple-choice and will cover the content from the workbook and lab experiments, as announced in class. The final exam will be cumulative.

A data and formula sheet will be provided, along with a periodic table. You will be permitted to use a SHARP-ELS10 series scientific calculator. All other brands and models of calculators will be confiscated. Proctors and instructors do not lend calculators. It is your responsibility to bring the correct calculator and ensure it is in proper working order. It is a good idea to bring a spare calculator of the same model. Obviously, you will not be permitted to share calculators during tests and exams.

Equal Opportunity and Evaluation Policy

We are here to help you achieve your goals. We want you to do well in the course. We were, at one time, students ourselves, so we understand the importance of course grades and the hard work that you will invest into this course.

Most importantly, we also have to be fair. The university is committed to academic integrity and has high ethical and moral standards. All students will be treated equally and evaluated using the criteria presented in this course outline and their respective weights. The evaluation criteria are based strictly on actual achievement, not on effort or how hard the student tried. Claims of an excellent academic history, of attendance in the course components, or of personal issues (family, relationship, financial, etc.) cannot be used to justify a higher grade in the course because they are not criteria for evaluation. There is no extra work available for extra credit or to “make up” another grade. We do not offer any extra assignments, essays, experiments, or other work of any kind to any student.

The requirement for a higher grade in order to, for example, maintain a scholarship, enter a program, or obtain a higher GPA for various reasons, is not a justifiable reason for increasing your grade. If we increased or “bumped” your grade (i.e. gave you a grade that you did not legitimately earn), it would be unfair to the other students and also a great disservice to the scholarships and programs who are evaluating all students on the basis of their grades. Please do not ask us for a grade increase.
Academic Policies and Legalities

The website for Registrarial Services is http://www.registrar.uwo.ca.

In accordance with policy, https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf, the centrally administered e-mail account provided to students will be considered the individual’s official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

It is university policy that a regularly scheduled class (lecture, lab, or tutorial) takes precedence over tests and exams. Therefore, if another course schedules a test or exam that takes place during your chemistry lecture or lab, the instructor for that course must accommodate you.

Aside from the specified calculator, no other electronic devices (phones, iPods, etc.) may be used during tests and exams, even for timekeeping purposes. They may not be at your test/exam desk or in your pocket. Any student found in possession of these prohibited devices will receive a mark of zero on the test or exam.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at this website: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Computer-marked, multiple-choice tests and/or exams will be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Audience response systems (“clickers”) will be used to provide immediate feedback on your understanding of course concepts. You must use your own clicker account and may not submit responses for any other student. The data collected using the devices will not be used for research purposes without your consent.

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). Details will be provided as needed. The grading scheme will not change. Any remaining assessments will also be conducted online as determined by the course instructors.

The Midterm Test and Final exam are in-person assessments. In the event that one or more of these assessments need to be conducted online due to COVID-19, they may be conducted using a remote proctoring service such as Proctortrack that is approved by Western University. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide personal information (including some biometric data) and the session will be recorded. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service, such as these listed here https://www.proctortrack.com/tech-requirements. More information about this remote proctoring service, including technical requirements, is available on Western’s Remote Proctoring website at: https://remote proctoring.uwo.ca and https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf.
Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: https://www.uwo.ca/sci/counselling/.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at 519-661-2147 if you have questions regarding accommodation.

The university’s policy on Accommodation for Students with Disabilities can be found here: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf

The university’s policy on Accommodation for Religious Holidays can be found here: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Learning-skills professionals at Learning Development & Success (https://www.uwo.ca/sdc/learning) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling. Online resources are available.

Students who are in emotional/mental distress should refer to Mental Health@Western (https://www.uwo.ca/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/your-services/.

Student Absences

Students who experience an extenuating circumstance (such as illness or injury) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

- Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:
  - An absence must be no more than 48 hours
  - The assessment must be worth no more than 30% of the course grade
  - No more than two SRAs may be submitted during the Fall/Winter term

- For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.

- Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other
reasons. All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling Office of your home faculty.

For more information, please consult Western’s policy on academic consideration for absences: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf

For the Student Medical Certificate (SMC), please see: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

Religious Accommodation: When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University’s list of recognized religious holidays (updated annually) at https://multiculturalcalendar.com/ecal/index.php?s=c-univwo.

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 519-661-3040 or scibmsac@uwo.ca. Their website is: https://www.uwo.ca/sci/counselling/

If you are a student from another faculty, please contact the Academic Counselling Office of your Faculty.

Late Mastering Chemistry Assignments

If you have received academic consideration for not completing an assignment by the due date, please email chem1302@uwo.ca to request an extension. An extension of 5 days will be applied. It is your responsibility to submit your assignment by this new due date. Extensions will not be granted without academic consideration, and thus if academic consideration is not obtained, only assignment questions completed prior to the due date will be granted credit.

Missed Lectures (iClicker Questions)

We understand that you may not be able to attend class from time to time. Thus, the grading for the iClicker component is designed to allow for occasional absences/missed questions. iClicker grades will not be adjusted for an occasional missed question/assignment. You do not need to email if you miss a class or iClicker questions.

That said, if you have a long-term absence (one week or more) that is supported by academic consideration, then you may email chem1302@uwo.ca to request that your iClicker marks be adjusted. This adjustment will occur after the last class and will excuse you from these missed questions.

Missed In-Person Labs

There are no make-up, in-person labs, and it is not possible to reschedule them. If academic consideration has been granted for the missed lab, the lab will be given a mark of EXCU (excused), which shifts the weight of the missed lab onto all of the other labs. You do not need to email, as this adjustment will be completed automatically at the end of the term upon receipt of your academic consideration. If academic consideration is not granted, the missed lab will be given a grade of zero.
Tests and exams may contain questions related to the theoretical aspects of the experiments. You are responsible for the material pertaining to the missed labs.

**Late Lab Report Submission**

If you have received academic consideration for not being able to submit your report by the due date, please email chem1302@uwo.ca and request an extension. This procedure applies to both in-person and online lab submissions. An extension of 5 days will be applied. It is your responsibility to submit your lab components by the revised due date. Your submitted lab report will be marked as though it were on time. Late lab reports will not be accepted without academic consideration.

**Missed Midterm Test or Final Exam**

If you have received academic consideration for missing the Midterm Test, you will be able to write the Make-Up Midterm Test on Saturday, March 5, 2:00 – 4:00 pm. If you are unable to write the Make-Up Midterm Test and receive academic consideration for missing both the Midterm Test and Make-Up Midterm Test, then the weight of this test will be shifted to the Final exam. A grade of zero will be assigned if you miss the Midterm Test without academic consideration, or if you are eligible for and miss the Make-Up Midterm Test without academic consideration.

If you are unable to write the Final Exam, contact your faculty’s Academic Counselling Office as soon as possible. They will assess your eligibility to write the Special Exam (the name given by the university to a make-up Final Exam) in May of 2022.

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (see https://registrar.uwo.ca/academics/examinations/exam_conflicts.html).

**How to Achieve Your Goals in Chem 1302B**

You will be more successful in the course if you recognize the following:

1. Like many sciences, chemistry is a cumulative subject. Because one topic acts as a foundation for the next, it is essential to stay up-to-date by studying the material and doing practice problems.

2. Learn why something is the way it is, not just what it is. Please realize that memorization is not the same as learning and understanding. When working on questions from the workbook, focus on the concepts, the thought process, how to arrive at the answer, and why the answer is the answer.

3. Don’t just attend lecture – get something out of the experience! Think. Engage. Write down key points. Sketch out connections. Record any questions you have.

4. Follow up on those questions – we are here to help! Visit the Resource Room or post your questions to the OWL forum. Ask these questions as they arise rather than waiting until just before an assessment.

5. Labs are intended to be an enjoyable experience. Prepare for each lab in advance by reading the lab manual and doing the prelab exercise. Think and ask about the theory and the concepts behind the experiment. Be mindful of the details.
6. Complete all of the practice problems in the workbook for each topic. Avoid just checking the answers — let yourself struggle and think before looking for hints. Again, visit the online resource room to discuss any concepts or questions.

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 paperwork in the Faculty of Science’s Academic Counselling Office. 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.