

Preliminary Outline

Chemistry 112.3 - Course Outline (T1, 2023-24)

General Chemistry I: Structure, Bonding & Properties of Materials

Instructors and Contact Information

Section	Instructor	Email
01	Dr. Ian Burgess	ian.burgess@usask.ca
03	Dr. Ian Burgess	ian.burgess@usask.ca
05	Dr. Tim Kelly	tim.kelly@usask.ca
07	Dr. David Sanders	david.sanders@usask.ca
Laboratory Manager: Dr. Alex Bartole-Scott (Interim Lab Manager- Dr. Pearson Ahiahonu)		firstyear.chem@usask.ca pearsonahiahonu@usask.ca

General questions about the course should be directed to the instructor ***for your section***.

Instructor office hours will be posted on Canvas, and may be revised throughout the term.

Treaty Acknowledgement

I would like to acknowledge that the Saskatoon campus of the University of Saskatchewan is on ***Treaty Six Territory*** and the ***Homeland of the Métis***. We pay our respect to the First Nation and Métis ancestors of this place and reaffirm our relationship with one another. I would also like to recognize that some may be attending this course from other traditional Indigenous lands. I ask that you take a moment to make your own Land Acknowledgement to the peoples of those lands. In doing so, we are actively participating in reconciliation as we navigate our time in this course, learning and supporting each other.

Course Information

Course Website

CHEM 112 consists of lecture and laboratory components. For each, you will get access to a Canvas site. You should regularly visit these sites to avoid missing information.

Information on the laboratory is available for:

Students in CHEM 112 - Labs (LC3 to LV3 inclusive)	https://canvas.usask.ca/courses/83706
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Catalog Description

Structure, bonding, and properties of materials. Topics include atoms and molecules, bonding, molecular structure, intermolecular forces, states of matter, and properties of materials. The laboratory illustrates material covered in the lectures.

Course Prerequisite(s):

Chemistry 30 or CHEM 90 or CHEM 100; and (Mathematics B30 or Foundations of Mathematics 30 or Pre-Calculus 30).

- Mathematics C30 or Geometry-Trigonometry 30 is strongly recommended. Students with credit for CHEM 111 or 114 may not take this course for credit.
- **Data shows that students who lack the CHEM 30 pre-requisite do very poorly in CHEM 112, e.g. >50% drop or fail rate, and a ~10% lower average mark. If you do not have the CHEM 30 pre-requisite, drop CHEM 112 immediately, and register for CHEM 90/100 or a remote offering of Chemistry 30.**

Required Texts

Please note: This class uses WW Norton's textbook, Chemistry, and their Smartwork5 platform for homework assignments and grading. Before committing to the purchase of the text, students may get access to both the e-text and Smartwork5 assignments as WW Norton offers a free 21-day trial of the textbook and Smartwork5. Students will be able to register for the free trial through the links provided on Canvas.

1. *Chemistry*, 6th Edition, T.R. Gilbert et al. ISBN 9780393697322, either e-book or loose-leaf (which includes the e-book) version.
 - Your purchase includes a registration code that is required to register for the e-book and the Smartwork5 online homework system (makes up 10% of the course mark).
 - You must purchase the textbook from the USask bookstore in order to ensure that your registration code will be valid. You CANNOT buy a used version of the textbook from someone else because it will NOT give you access to Smartwork5 (the registration code is not transferable). However, if you have taken CHEM 112 previously your access to Smartwork5 should still be valid.
 - Once you have received the registration code, complete the registration process online by following instructions on your Chem112 Canvas site.
2. *Chem112 Laboratory Manual - 2023/2024*. ISBN 9781533954473

Evaluation

Course Grade:

The final grade is reported on a percentage scale. Your overall mark will be calculated based on the following weightings:

Laboratory	25%
Assignments (Smartwork5)	10%
Midterm	20%
Final examination	45%

Your final grade in the course will be assigned based on your overall mark.

To be assigned a passing final grade, you must fulfill the following conditions:

1. Obtain an overall mark greater than 50%, **AND**
2. Attend the laboratory regularly and complete all required lab work (with no more than one missed lab) and obtain a 50% mark therein, **AND**
3. Achieve a satisfactory performance in the examinations.

See page section *Absences from the Assigned Lab Period* for further information.

Midterm Examinations

The mid-term examination will be held for all sections on **Saturday October 21, 2023 from 11:00 am – 1:00 pm**. The exam will be in-person, closed-book exam. Please **mark this date and time on your calendar** and plan now to ensure that your work and travel plans do not interfere with this schedule.

Students who are unable to make the scheduled midterm exam time due to a valid conflict (job, childcare, etc.) will – **upon application to their instructor** – be able to write the midterm exam during the following week; Tuesday or Wednesday evening (6-8 pm).

Final Examination

The final exam will be scheduled by the Registrar's office and will be held during the December final examination period. Exams can be scheduled at any time in the examination period. **Do not** schedule travel until **after** the official exam schedule is released. Expect the final exam will be an in-person, 'closed book' exam. Details will be announced in class.

Homework Assignments (Smartwork5)

The course textbook is fully supported by the Smartwork5 website. We will use Smartwork5 to assign graded and non-graded homework. The homework assignments will not only help you to test if you understand the material, but it will also teach you how to solve chemical problems. Some of the homework assignments are fully tutored, which is one of the strengths of the Smartwork5 website. **Assignments should be done by all students individually. Students who do assignments themselves, even if they have trouble with them initially, outperform their classmates significantly on examinations.**

Chemistry assignments will be scheduled ~weekly for ten weeks. The first assignment is non-graded, while all other ten assignments will be graded and equally contribute to the 10% assignment grade. The assignment due dates are listed in the following table. **There are NO extensions of due dates for the graded assignments.**

Online Assignment (Smartwork5) Information

Assignment	Materials covered	Due date
Introduction to Smartwork5	Tutorial assignment on Smartwork5- Non-graded	11:59 pm, Tues., Sept. 12, 2023
Assignment #1-Graded	Chapter 1 and Chapter 2 Particles of Matter, Atoms, Ions and Molecules	11:59 pm, Tues., Sept. 19, 2023
Assignment #2- Graded	Chapter 2 and Chapter 3	11:59 pm, Tues., Sept. 26, 2023

	Atoms, Ions and Molecules and Stoichiometry	
Assignment #3- Graded	Chapter 3 Stoichiometry and Limiting Reagent Problems	11:59 pm, Tues., Oct. 4, 2023
Assignment #4- Graded	Chapter 4 Reactions in Solution	11:59 pm, Tues., Oct. 10, 2023
Assignment #5- Graded	Chapter 4 / 14 / 15 Reactions in Solution and Acid-Base Equilibria,	11:59 pm, Tues., Oct. 17, 2023
No Assignment due Oct 24th		
Assignment #6- Graded	Chapter 5 Properties of Gases	11:59 pm, Tues., Oct. 31, 2023
No assignment due Tues. Nov. 7, 2023 due to Fall Midterm Break		
Assignment #7- Graded	Chapter 6 Thermochemistry	11:59 pm, Tues., Nov. 14, 2023
Assignment #8- Graded	Chapter 7 A Quantum Model of Atoms	11:59 pm, Tues., Nov. 21, 2023
Assignment #9- Graded	Chapter 8 Chemical Bonds	11:59 pm, Tues., Nov. 28, 2023
Assignment #10- Graded	Chapters 9 & 10 Molecular Geometry & Intermolecular Forces	11:59 pm, Tues., Dec. 5, 2023

Note: These assignment due dates may change to a later date at the discretion of the instructors.

To register for the homework assignments (and view the online e-textbook):

- Go to your Chem112 Lecture Canvas site (**Note:** to register and complete homework assignments you must **always go through the Canvas portal**)
- Click on “Modules” (left-hand side, in green text) – “CHEM112 Smartwork5 assignments”
- Follow the instructions on registering for Smartwork5 assignments.

Technical Problems with Smartwork5

In order to minimize technical errors or issues, please see the Smartwork5™ website for more details on system requirements:

<http://wwnorton.knowledgeowl.com/help/system-requirements#smartwork>

NOTE: It is very important that students use the link provided for Smartworks Assignments in Modules in their Canvas course. This is to ensure that your marks on each assignment are linked to Canvas Grades. If students use some other means to complete Smartwork5 Assignments, they will NOT receive credit for assignments in Canvas.

Recommended Technology for CHEM 112:

Some of the CHEM 112 content will be delivered online. Therefore, to take advantage of the university's remote learning resources, students in CHEM 112 will require:

- access to a **computer/laptop/smart device**
- access to a **stable internet connection**

The University's recommended technology requirements and specifications are listed here: <https://students.usask.ca/remote-learning/tech-requirements.php>. To resolve specific IT issues, please submit a request to **IT Support** through PAWS.

Microsoft Word/Excel/PowerPoint -Students will be required to hand in portions of lab activities electronically as written reports and graphs. Fortunately, every U of S student has access to a Microsoft Office 365 subscription.

Recommended Calculator

You **must have a simple scientific calculator** and know how to use it. Such a calculator **is required** for all in-person examinations. Programmable calculators are **not allowed** and, therefore, cannot be used for any examination. We recommend that students have use a basic scientific calculator (e.g. Texas Instruments TI-30X series, Hewlett-Packard HP 10s or 30S) for all CHEM 112 activities (labs, Smartwork5, and examinations).

Email

All University of Saskatchewan students are supplied with a university email account and are strongly encouraged to use the university account instead of Hotmail or Gmail (or other free email service) for any university-related correspondence. If you use a non-UoFS email, your email might be not answered. See http://www.usask.ca/its/guides/student_guide/ for more information about the services available to you and how to get your email account set up. **Please use the email feature in Canvas (accessed via the Inbox tab) for all electronic communication with your Instructor or the Laboratory Manager.**

Course Learning Objectives

The course focuses on structure, bonding and properties of materials with emphasis on both qualitative and quantitative aspects of chemistry. You will learn practical applications of chemistry through course material and laboratory experiments. The course strikes the careful balances between principles and applications and between qualitative and quantitative discussions. As a consequence, you will sharpen your skills in critical thinking and problem solving. Above all, the course will help you to understand the relevance of chemical concepts to your everyday life, and to your future career.

Topics discussed in the lectures are listed below, with cross-references to the textbook and the learning objectives for each section. You should read and review the textbook together with the lectures to achieve your own comprehensive understanding of the course material. The textbook sections identified below are assumed reading throughout the course.

The laboratory work is designed to both complement and supplement concepts presented with lectures and to develop skills in laboratory techniques, observation, and data analysis.

Chapter 1 – Particles of Matter

Conceptual understanding: Distinguish between pure substances and mixtures (§1.2); distinguish physical properties from chemical properties and physical processes from chemical processes (§1.5); recognize physical states of matter and changes in state (§1.6); the Scientific Method (§1.7); distinguish exact from uncertain values, precision and accuracy (§1.10); understand mean and standard deviation (§1.10)

Procedural competencies: Perform dimensional analysis and convert units (§1.9); calculate density from mass and volume (§1.10); use significant figures in calculations (§1.10); calculate mean (§1.10); convert temperatures (§1.11).

Chapter 2 – Atoms, Ions and Molecules

Conceptual understanding: The number of protons determines the identity of an element (§2.2-2.3); elements in the same group in the periodic table tend to have similar physical and chemical properties (§2.5)

<p>Procedural competencies: Write symbols for isotopes (§2.3); calculate the average atomic mass of an element (§2.4); locate elements on the periodic table (§2.5); classify compounds as ionic or molecular (§2.6); name inorganic compounds and writing their formulas (§2.7); name transition metal compounds and writing their formulas (§2.7).</p>
<p>Chapter 3 – Stoichiometry Procedural competencies: Convert number of particles into number of moles (or vice versa) (§3.2); convert mass of a substance into number of moles (or vice versa) (§3.2); calculate molecular mass of a compound (§3.2); balance a chemical equation (§3.3); write and balance a chemical equation for a combustion reaction (§3.4); calculate the mass of a product from mass of a reactant (§3.5); identify the limiting reactant and theoretical yield (§3.6); calculate percent yield (§3.6); determine an empirical formula from percent composition (§3.7); relate empirical and molecular formulas (§3.8); derive an empirical formula from combustion analysis (§3.9).</p>
<p>Chapter – 4 (additional information on acids/bases to be found in Chapter 15) – Reactions in Solution Conceptual understanding: Compare electrolytes, acids, and bases (§4.4 - 4-5); identify acid-base conjugate pairs §15.3 Procedural competencies: Compare concentrations in aqueous solutions (§4.2); calculate molarity from solute mass and solution volume or from solute mass, solution mass, and density (§4.2); calculate mass of solute / volume of stock solution to prepare a solution; dilutions (§4.2 - 4-3); write neutralization reaction equations, total and net ionic equations (§4.5, §4.7); calculate molarity from titration data (§4.6); predict precipitation reactions (§4.7); calculate mass of a precipitate (§4.7); calculate the solute concentration from a precipitate mass (§4.7); identify and describe strong/weak acids and strong/weak bases; (§15.2); calculate a pH from a known concentration of H⁺ (and vice-versa). and calculate a pOH from a known concentration of OH⁻ (and vice versa) (§15.4).</p>
<p>Chapter 5 – Gases Conceptual understanding: Relate two equation of state variables with each other (other variables constant) (§5.3-4); justify ideal gas law behavior in terms of KMT of gases (§5.8); consider real gas behavior at high pressure and low temperature (§5.9) Procedural competencies: Calculate atmospheric pressure, measuring pressure with a manometer (§5.2); calculate with simple two-variable gas laws (Boyle's, Charles's, Avogadro's, Amonton's) (§5.3); given three state variables, calculate the fourth (ideal gas law) (§5.4); calculate quantity of gas reactant or product in a chemical reaction (§5.5); calculate gas density (§5.6); calculate molar mass of a gas (§5.6); calculate mole fraction of a gas (§5.7); calculate partial pressure of a gas (§5.7); calculate gas partial pressure collected over water (§5.7).</p>
<p>Chapter 6 – Thermochemistry Conceptual understanding: Identify endothermic and exothermic processes (§6.3); Procedural competencies: calculate kinetic and potential energy (§6.2); calculate internal energy (ΔE) and P-V work (§6.3); predict the sign of ΔH_{sys} for physical and chemical changes (§6.4); determine the flow of energy (q) and enthalpy change associated with a change of state (fusion, vaporization, etc). or with changing the temperature of a substance (§6.5-6: 6.7, 6.8); determine specific heat of a substance and measure the enthalpy of reaction (§6.6); measure the heat capacity (calorimeter constant) of a constant pressure calorimeter (§6.6); use Hess's law (§6.7); recognize and write formation reactions (§6.8); calculate standard enthalpies of reaction from heats of formation (§6.8); calculate fuel value and food value (§6.9)</p>
<p>Chapter 7 – Quantum Mechanics Conceptual understanding: observation and origin of energy quantization in atoms (§7.1, 7.3); wave-particle duality (§7.3); describe energy levels in the hydrogen atom (§7.4); apply the Heisenberg uncertainty principle to electrons in atoms (§7.5); describe the shape, nodal patterns and radial electron distribution of s, p and d atomic orbitals (§7.7); rationalize and predict trends in atomic radius for main group atoms (§7.10); rationalize and predict trends in ionization energies for main group atoms (§7.11) Procedural competencies: calculate energy, wavelength and frequency of light (§7.2); calculate the energy of a photon (§7.3); calculate the energy change of an electron transition in the hydrogen atom (§7.4); calculate de Broglie wavelength for particles (§7.5); identify correct combinations of n, l, m_l and m_s and their corresponding orbital names (§7.6); calculate Z_{eff} for atoms on the periodic table (§7.8); prepare electron configurations for main group atoms (§7.8); prepare electron configurations for main group ions (§7.9)</p>
<p>Chapter 8 – Chemical Bonding Conceptual understanding: differentiate ionic and covalent bonds and represent by Lewis structures (§8.1, 8.2); relate bond strength and bond length (§8.7) Procedural competencies: draw Lewis symbols for covalent molecules with single and multiple bonds (§8.2); apply electronegativity to classify bond type and polarity (§8.3); identify and draw resonance structures (§8.4); use formal charges to select optimal resonance structure (§8.5); identify exceptions to the Octet rule (§8.6)</p>
<p>Chapter 9 – Molecular Geometry (excluding sections 9.4 and 9.6) Conceptual understanding: understand the role of VSEPR theory in determining the shapes and properties of molecules</p>

Procedural competencies: Use VSEPR and the concept of steric number to predict the bond angles in molecules and the shapes of molecules with one central atom (§9.2); predict if a substance is polar or nonpolar on the basis of its molecular structure (§9.3)

Chapter 10 – Intermolecular Forces

Conceptual understandings: explain the origin of dispersion, ion-dipole, dipole-dipole, dipole-induced dipole and hydrogen bonds (§10.2-10.3); explain the effect of intermolecular forces on boiling points of compounds (§10.3); explain the effect of intermolecular forces on the solubility of compounds in water and other solvents (§10.7); relate vapor pressure to temperature and IMF (§10.4);

Laboratory Information

When do the labs start?

The CHEM 112 labs will begin the week of September 18th. A series of labs and problem-solving workshops will take place in person ~ weekly for approximately 9-10 weeks. Full details of the laboratory/PSW program can be found on the CHEM 112 Lab Canvas website. A schedule of these sessions is appended to this outline.

The Lab sessions will consist of a combination of posted pre-lab online videos, and/or virtual lab simulations with in-person experiments. Each student will be assigned a chemistry teaching assistant (TA) to help navigate the in-person learning environment and answer questions during these sessions.

Students will be expected to come prepared to these sessions by completing pre-lab activities, participate during the lab sessions, and complete post-lab reports/questions. The labs will take approximately 3 hour and 20 minutes and will occur on a weekly basis.

What do you need for the first lab?

- Read through the Introductory section on your Canvas lab page:
<https://canvas.usask.ca/courses/83706> Complete the first lab/PSW Module and any pre-lab activities on Canvas
 - Chem112 Laboratory Manual and Safety Glasses

Exemption from the Laboratory Component of CHEM 112

Students repeating CHEM 112 who have completed the ***IN-PERSON ONLY*** component of the course within the last two years and received a grade of >70% may be granted an exemption from the laboratory portion of this course. (Students who have completed the remote laboratories in 2020-2021 are NOT eligible for an exemption this term). If you believe you qualify **and you wish to use your exemption, please contact the laboratory manager to get permission to register in lab section L01 in Term 1.** This is an 'artificial' lab section reserved exclusively for students who qualify for lab exemptions.

- If you register for L01, then, in the development of your course mark, we will use your earlier laboratory grade.** A lab exemption can be used **once** in the calculation of an overall course mark (if a student needs to repeat a course more than once, they must also repeat the lab portion in subsequent attempts)
- If you qualify for a lab exemption, BUT remain registered in a regular lab section, you are indicating to us that you wish to re-take the lab and, in that**

case, your new lab grade will be used. Any exemptions not applied for by September 15th (for Term 1) will not be honoured.

Laboratory Work

Each lab will consist of:

- Pre-lab Readings, videos etc. and Pre-lab assignments / quizzes due before your lab
- During lab exercises which will be marked/evaluated
- Post-lab Assignments which must be submitted on Canvas within 48 hours after your lab session (unless otherwise notified).
 - Late assignments will not be permitted
 - Assignments must be submitted through Canvas (emailed assignments will not be permitted unless by permission of the Lab Manager and will incur a late penalty of 20% per day)
 - Students are responsible for ensuring that the submitted assignments are the correct document, correct format, have the correct number of pages etc. Check your submission on Canvas! Incorrect assignments, blank assignments etc. will be awarded marks of 0- no exceptions.

Absences from the Assigned Lab Period

Students are expected to participate in all labs. However, we understand that on occasion students may need to miss a lab due to unavoidable circumstances (such as illness, emergencies, appointments that can't be rescheduled, compassionate reasons etc.). Note: Tests/exams or activities in other courses should not be valid reasons for missing your lab. It is your responsibility to arrange alternate test times outside of your regularly scheduled lab time.

Students are not required to contact their TAs or the Lab Manager due to a missed laboratory. All students will receive the highest 8 lab marks out of 9 labs, therefore if a student misses one lab they will have that lab removed from their total lab average. However, keep in mind **there is only one missed lab allowed per term.** If a student misses two labs, they will be given an opportunity to attend one End of Term Make-up Lab. If a student misses three or more labs or does not hand in three or more post-lab activities, they must withdraw from the course as they will not receive a passing grade in Chem112 (regardless of performance on assignments/exams). Reminder: Students are also required to achieve a minimum overall lab grade of 50% to receive a passing grade in the course.

All missed labs, and lab assignments will receive marks of 0. No exceptions.

It is the student's own responsibility to keep track of absences in the lab. The lab staff will not be contacting students personally to ensure attendance or keep track of absences.

Make-up labs during the term will be granted in extenuating circumstances only. If necessary, you must contact the lab manager at least **TWO WEEKS** before to determine if a make-up lab can be accommodated. An example of a valid reason for rescheduling a lab may include commitments for Huskies athletes.

The laboratory manager oversees the teaching assistants and labs for all sections of the course. Scheduling, permission and exemption issues for labs should be addressed to Dr. Pearson Ahiahonu (pearson.ahiahonu@usask.ca or firstyear.chem@usask.ca)

Lab Absence Scenarios

Number of lab Absences or missed Laboratory work?	How does this affect student's lab mark?	Eligibility for End of Term Make-up Lab?
0	Student will receive highest 8 lab marks out of 9 labs	No
1	Student will receive 0 for missed lab but will receive highest 8 lab marks out of 9 labs.	No
2	Student will receive 0 for two missed labs, and will receive highest 8 lab marks out of 9 labs. (Student will have the opportunity to perform End of Term Make-up Lab to replace the marks from one missed lab.)	Yes
3 or more	Student should withdraw from the course as they will not receive a passing grade in Chem112.	No

COVID-19 and other Illness Protocols for In-Person Laboratories:

If you are sick, it is imperative that you stay home and do not spread your illness. Even if it is not COVID-19, please stay home and monitor your symptoms.

In the unfortunate event that:

- you receive a positive COVID-19 test result or if you have symptoms and suspect it could be COVID-19
- if you have been instructed to self-isolate/quarantine for any illness or exposed to COVID-19 by a close contact

Do NOT come to campus! **Under no circumstances should you attend on-campus activities in such scenarios.** Please let lab manager know as soon as possible by email, particularly if you have recently attended a class in-person

Laboratory Schedule – St. Peter’s College (as of July 30, 2023)

- This lab schedule is subject to change based on public health and university guidelines. Students will be notified by Canvas announcement and email about any necessary changes to the lab schedule or locations of labs. Laboratories may be scheduled, with notice, in any of laboratory periods on your schedule
- **You are responsible for ensuring that you attend experiments and are prepared.** Refer to this schedule every week to make sure you know which session will be performed on a given day.

Dates (2023)	Experiment/Lab
Sept. 18	Laboratory 1: Introduction, Safety and FUN-damentals of Chemistry
Sept. 25	Laboratory 2: Household Chemicals
Oct. 2	Laboratory 3: Stoichiometry- Getting the Most Bang for your Buck -
Oct 9	No labs due to Thanksgiving holiday
Oct. 16	Problem Session 1 (see PS1-PS6 at back of manual)
Oct. 23	Laboratory 4: Acetic Acid Content of Vinegar and <i>Post-Lab Quiz</i>
Oct. 30	Laboratory 5: Reactions of Ions
Nov. 6 - 9	No labs this week due to Fall Midterm Break
Nov. 13	Laboratory 6: Determination of the Gas Constant, R
Nov. 20	Laboratory 7: Thermochemistry of Hot and Cold Packs
Nov. 27	Laboratory 8: Structure and Shapes of Molecules – VSEPR – Part I
Dec. 4 by 11:59 pm	Lab 8: Structure and Shapes of Molecules- VSEPR- Part II All students must complete Graded session at https://chemtel.usask.ca
Dec. 4	End of Term Make-Up Lab (Available only to students who missed two labs this term – see Absences from the Assigned Lab Period above)

Student Supports

Student Feedback: Student feedback is encouraged and will be obtained using the Course Evaluations tab in Canvas or SLEQ (Student Learning Experience Questionnaire).

Academic Integrity

Copyright

Course materials are provided to you based on your registration in a class, and anything created by your professors and instructors is their intellectual property, unless materials are designated as open education resources. **This includes exams, PowerPoint/PDF slides and other course notes.** Additionally, other copyright-protected materials created by textbook publishers and authors may be provided to you based on license terms and educational exceptions in the Canadian Copyright Act (see <http://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>).

Before you copy or distribute others' copyright-protected materials, please ensure that your use of the materials is covered under the University's Fair Dealing Copyright Guidelines available at <https://library.usask.ca/copyright/general-information/fair-dealing-guidelines.php> . For example, posting others' copyright-protected materials on the open web is not covered under the University's Fair Dealing Copyright Guidelines, and doing so requires permission from the copyright holder.

For more information about copyright, please visit <https://library.usask.ca/copyright/index.php> where there is information for students available at <https://library.usask.ca/copyright/students/rights.php> , or contact the University's Copyright Coordinator at copyright.coordinator@usask.ca or 306-966-8817.

Integrity in a Remote Learning Context

Although the face of teaching and learning has changed due to COVID-19, the rules and principles governing academic integrity remain the same. If you ever have questions about what may or may not be permitted, ask your instructor. Students have found it especially important to clarify rules related to exams administered remotely and to follow these carefully and completely.

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (<https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php>) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (<https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php#IXXIAPPEALS>)

For more information on what academic integrity means for students see the Academic Integrity section of the University Library Website at: <https://library.usask.ca/academic-integrity#AboutAcademicIntegrity>

You are encouraged to complete the Academic Integrity Tutorial to understand the fundamental values of academic integrity and how to be a responsible scholar and member of the USask community - <https://library.usask.ca/academic-integrity.php#AcademicIntegrityTutorial>

Access and Equity Services (AES) for Students

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals at any time. Those students who are registered with AES with mental health disabilities and who anticipate that they may have responses to certain course materials or topics, should discuss course content with their instructors prior to course add / drop dates. In order to access AES programs and supports, students must follow AES policy and procedures. For more information or advice, visit <https://students.usask.ca/health/centres/access-equity-services.php>, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

For information on AES services and remote learning please visit <https://updates.usask.ca/info/current/accessibility.php#AccessandEquityServices>

Academic Help for Students

The University Library harnesses the power of peer learning by training academically strong upper-year students to provide academic support. The philosophy of Peer Assisted Learning (PAL) is to provide positive, safe and comfortable learning environments that encourage, support and empower students in their academic pursuits. In CHEM 112 Peer Mentors will be leading weekly structured study group sessions remotely. Details will be provided on Canvas.

The University Library offers a range of learning and academic support to assist USask undergrad and graduate students. For information on specific services, please see the Learning page on the Library web site <https://library.usask.ca/support/learning.php>.

Consulting and Tutors

You are encouraged to approach instructors and laboratory staff on an individual basis to discuss any aspect of the course. The University of Saskatchewan Students' Union (<http://www.ussu.ca>) and Chemistry Students Society (<http://theecs2.ca/>) both maintain a tutor database. Tutoring is also available through Student Learning Services (<https://library.usask.ca/studentlearning/tutor.php#StudentLearningServicesTutoring>).

Please note that most CHEM 112 instructors will generally respond to emails **within 24 hours**, during working hours. Please first check the course outline (this document) and the CHEM 112 course website to ensure that the answer is not already posted.

College Supports

Students in Arts & Science are encouraged to contact the Undergraduate Student Office and/or the Trish Monture Centre for Success with any questions on how to choose a major; understand program requirements; choose courses; develop strategies to improve grades; understand university policies and procedures; overcome personal barriers; initiate pre-career inquiries; and identify career planning resources. Contact information is available at: (<http://artsandscience.usask.ca/undergraduate/advising/>)

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (<https://students.usask.ca/student-central.php>).

Aboriginal Students' Centre

The Aboriginal Students' Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, bringing Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (<https://www.facebook.com/aboriginalstudentscentre/>) to learn more.