CHEM:1070 S2022 v. 1-15-22

Prof. Lou Messerle

Campus Address: E458 Chemistry Building (CB)  Department of Chemistry
Phone: (319) 331-6212 (cell)  DEO: Prof. Leonard R. MacGillivray
Email: CHEM-1070-Spring2022@uiowa.edu  Phone: (319) 335-1350
Drop-in Hours, Prof. Messerle: CB E427 conf. room  Email: len-macgillivray@uiowa.edu

Pre-Unit-Exam Review Sessions: 4:00 - 5:00 PM  Monday February 7 and Tuesday February 8
Monday March 7 and Tuesday March 8
Monday April 18 and Tuesday April 19
in W55 CB (capacity 70; tentative, subject to finding a larger room on campus if needed)

Drop-in Hours for Discussion Section Teaching Assistants:
Josie Welker  Wed. 11:30 AM -12:30 PM  Thurs. 2:30 PM - 3:30 PM  (both via Zoom)
Teresa Feldman  Mon. 1:30 - 2:30 PM  Wed. 12:30PM - 1:30 PM  (both in CB W215)

All portions of course will take place in Central Time, if asked by UI to move to virtual instruction.

Course Description and Goals
CHEM:1070 is an introduction to Chemistry and is designed for students lacking an adequate or advanced Chemistry course in high school. You will learn how scientific knowledge is acquired, applied, and communicated as you master many of the key concepts in the science of Chemistry, often referred to as the “Central Science” for its practical applications to society, humanity, and underpinnings of biochemistry, molecular biology, and medicine.

You are expected, via weekly lectures, discussion sections, ALEKS homework, quizzes, and Learning Catalytics in lecture and in discussion sections, to work regularly throughout the semester on developing relevant Chemistry content knowledge, critical thinking abilities, and problem-solving skills. You will acquire this knowledge and these abilities and skills through active learning in and outside of the lecture classroom, in required discussion sections with graduate student Teaching Assistants (TA’s), in optional drop-in hours with Prof. Messerle and/or with TA’s, with undergraduate student Learning Assistants (LA’s) in the classroom, and, if helpful, with an undergraduate Supplemental Instructor (SI) at set times. Both LA’s and the SI have previously taken and succeeded in CHEM:1070.

The University of Iowa has devoted significant, additional financial resources, as listed above, in order to increase your success in mastering General Chemistry I concepts as a central STEM course.

The goals of this course are:
1) Mastery of major concepts and basic theoretical principles in Chemistry
2) Understanding the relationship between the microscopic, macroscopic, and symbolic descriptions of matter and the changes that it undergoes
3) Developing critical thinking and problem-solving skills, useful for future courses and careers

This course is approved as part of the General Education Program (GEP) in the College of Liberal Arts and Sciences and can be used to fulfill part of the requirement in the Natural Sciences category.

This course will cover the following topics: measurement and units, matter and energy, stoichiometry and chemical equations, thermochemistry, electronic structure of atoms, periodic trends, molecular bonding and structure, nuclear chemistry, properties of gases, intermolecular forces, solution chemistry, equilibrium, oxidation-reduction reactions, and acids and bases.

Requirement: proficiency with basic algebra
Course Learning Objectives
At your successful end of this course, you will be able to:
1) Demonstrate basic understanding of the structure and properties of chemical species using the tools of the discipline, including models, data analysis, and symbolic representations
2) Gain experience in the practices of scientific investigation, including observation, logic, analysis, objectivity, precision, and clear communication

Course Delivery
CHEM:1070 consists of three scheduled components (lecture, discussion, and exams) meeting in-person. Attendance is expected in all three components. You should devote at a minimum 6 hours per week to out-of-class homework, quizzes, and studying for this course (3 credits x 2 hours out-of-class time per credit). Supplemental instruction is also available. The course components are the following formats:

In-Person Lectures
Instructor: Prof. Messerle
Lecture Time: Tuesday and Thursday from 8:00 AM – 9:15 AM
Delivery Format: Lectures are in person in W290 Chemistry Building (CB) at the scheduled times and may include interesting in-class demonstrations. Learning Assistants (LA’s) will be spread throughout W290 in order to help you with answering lecture questions and Learning Catalytics questions. Lecture content may be recorded as videos, if technical support is available. See Lecture Participation section for info.

In-Person Discussion Sections
Instructors: Graduate student teaching assistants (TA’s) overseen by Prof. Messerle
Time: once-weekly enrolled section
Delivery Format: face-to-face in your assigned classroom, as listed on your MyUI schedule

In-Person Exams
Instructors: Prof. Messerle along with graduate student proctors
Time: see dates/times in Course Calendar and Exam Sections of this syllabus.
Delivery: administered in-person in MacBride Hall Auditorium (AUD MH) (posted in ICON, announced in class)

The University of Iowa strongly encourages you, your fellow students, faculty/instructors, TA’s, LA’s, the SI, and staff to be vaccinated and boosted against COVID-19 in order to prevent new or medically-significant breakthrough infection of course participants by Delta, Omicron, and/or new COVID-9 viral variants. The University encourages students, faculty, and staff to wear a face mask while on campus and strongly encourages use of face masks in all classroom settings, during in-person drop-in office hours, and discussion sections. Face mask usage is required on CAMBUS and in specified research and healthcare settings.

Media/System Requirements
For your best learning experience, the following are required:

Your personal computer. While tablets, smartphones, and other mobile devices may allow for completion of some coursework, they are not guaranteed to work in all areas. It is recommended that you have access to a Windows- or Mac-based computer or laptop in order to complete coursework in the event that your mobile device does not meet the needs of this course.

Reliable Internet access. A wired Ethernet connection for your computer is your best option. Wireless and cell-phone data connections have in the past, and may experience, connection problems. Android and iOS operating systems are not fully-supported within ICON.

Recommended Browsers. Chrome and Firefox are recommended for reliable ICON access. Other browsers, including Safari (sigh), may experience technical issues with pictures/figures in ICON.

If you need assistive technologies, then you may have different computer and technology requirements. Please check with Student Disability Services in order to determine the requirements for the specific technologies in order to support your online class components.

Need help with ICON or technology? Please contact ITS Helpdesk (319 384-HELP).
Required Textbook/Media

The **required textbook/resources** for CHEM:1070 are:

**Textbook:** Modified Mastering Chemistry with Pearson Etext for General, Organic, and Biological Chemistry: Structures of Life is provided as part of ICON Direct Textbooks, and approximately $100.79 will be applied to your U-Bill: *General, Organic, and Biological Chemistry: Structures of Life, 6th edition*, by Karen C. Timberlake, Pearson: ©2018 (ISBN: 9780134813028), *with Learning Catalytics website access*.

**Online Homework:** Access to online homework is provided as part of ICON Direct Textbooks, and approximately $55.13 will be applied to your U-Bill: *ALEKS 18-Week (126 Days) Access for General, Organic, and Biochemistry*, without the Ebook, McGraw Hill: ©2020 (ISBN: 9781264197422).

**Calculator:** A basic scientific calculator (for example, TI30Xa or TI-30XIIS), **WITHOUT** communication capabilities, is allowed during exams. Please obtain and familiarize yourself with your calculator’s basic math functions.

**Gradescope** – free Discussion section assignment grading software, accessible via link in ICON.

**PDF generator/ converter software.** Students will need to create a single .pdf of multiple page assignments. Many free app options are available, including Genius Scan, CamScanner and Microsoft Office Lens. Contact **ITS Helpdesk** (319-384-HELP).

**Opt-out Option for ICON Direct Electronic Materials**

**Discussed in the first lecture:** In order for the University of Iowa to maintain compliance with HEA funding rules in the Code of Federal Regulations, an opt-out mechanism for course fee-funded electronic course materials is provided. Our course has two ICON Direct listings: 1) *Learning Catalytics with eTextbook* (listed as Modified Mastering Chemistry with Pearson e-text), and 2) *ALEKS*.

By choosing to opt-out of either or both ICON Direct listings, you will no longer have access to **ALL** of the electronic materials provided in those listings. For example, you cannot choose to opt-out of the eText without also losing access to Learning Catalytics.

Please consider that if you choose to opt-out, you will not be able to earn ALEKS and/or Learning Catalytics points, which corresponds to missing up to 260 pts. (out of maximum 1000 pts. total), a low B grade range assuming your other grading components are perfect. Furthermore, you will not have e-Textbook access. Since opting-out would severely limit the grade that you could obtain in this course, **Prof. Messerle strongly recommends that you do not opt-out.** Access to ALEKS and Learning Catalytics is less expensive, through UI-publisher negotiated course fee, than as stand-alone products.

After reading the above description, if you still wish to opt out, you can find instructions on how to do so in the General Information module of this ICON course. The opt-out period ends on the last add/drop date of the semester, **January 31, 2022, at 6:00 PM.** If you have opted-out by mistake, please use the same instructions in our ICON course to opt-back in **before** that deadline. You cannot change your decision after January 31, 2022.
Grading Criteria

Your final course grade will be assessed based on your performance on the following items:

<table>
<thead>
<tr>
<th>GRADED COMPONENT</th>
<th>POINTS</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Midterm Exams</td>
<td>375 pts.</td>
<td>37.5% (3 @ 12.5%)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>125 pts.</td>
<td>12.5%</td>
</tr>
<tr>
<td>ICON Quizzes</td>
<td>150 pts.</td>
<td>15.0%</td>
</tr>
<tr>
<td>Discussion Activities</td>
<td>160 pts.</td>
<td>16.0%</td>
</tr>
<tr>
<td>ALEKS Assignments</td>
<td>150 pts.</td>
<td>15.0%</td>
</tr>
<tr>
<td>ALEKS Pie Completion</td>
<td>40 pts.</td>
<td>4.0%</td>
</tr>
<tr>
<td>Total:</td>
<td>1000 pts.</td>
<td>100%</td>
</tr>
</tbody>
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Final course grades will be assigned as shown below. If you achieve the minimum number of points required for a given letter grade range, you will not receive a lower grade regardless of the class distribution. For example, a letter grade of C– or higher is guaranteed if you obtain 600.0 points or more by the end of the semester.

<table>
<thead>
<tr>
<th>LETTER GRADE</th>
<th>POINTS</th>
<th>POINT PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A range (A+, A, A+)</td>
<td>850.0 – 1000</td>
<td>85.0 – 100%</td>
</tr>
<tr>
<td>B range (B+, B, B+)</td>
<td>725.0 – 849.9</td>
<td>72.5 – 84.9%</td>
</tr>
<tr>
<td>C range (C+, C, C+)</td>
<td>600.0 – 724.9</td>
<td>60.0 – 72.4%</td>
</tr>
<tr>
<td>D range (D+, D, D+)</td>
<td>500.0 – 599.9</td>
<td>50.0 – 59.9%</td>
</tr>
<tr>
<td>F</td>
<td>below 500.0</td>
<td>below 50.0%</td>
</tr>
</tbody>
</table>

Plus and minus grades will be assigned. Those grades will NOT be evenly-split (probably) among the three categories (# B– ≠ # B ≠ # B+). The grade of A+ will be assigned to reward exceptional achievement, typically the top 1% of the class. Minor adjustments will be made at the end of the semester in cases of earned extra credit.

Opportunities for you to earn points are complete once the final exam is finished (by second week of May). At that point, there is no longer an opportunity for additional extra credit or re-doing assignments in order to increase your letter grade. Additionally, per past custom by former instructors, Prof. Messerle is unable to round your final percentage up to the nearest whole percentage point.

Course Learning Activities

To complete this course successfully, you should
- Read this entire syllabus (Quiz 1 on Friday January 21 will be made up of questions from syllabus)
- Read assigned chapters and download lecture notes
- Attend Prof. Messerle’s lectures, including lecture demonstrations that may show up on exams
- Watch recorded lectures, if available from technical support provided to Prof. Messerle
- Participate and complete Learning Catalytics questions in class and in your discussion section
- Participate in and complete a weekly group worksheet in your discussion section
- Complete ALEKS online homework by deadlines
- Complete online ICON quizzes by deadlines
- Complete all three in-person exams and the final exam
- Watch supplemental media, if available
- Frequently check ICON and read announcements
Assessment of Your Overall Course Performance and Accomplishments

ICON Quizzes (12):  
You need to complete 12 online ICON quizzes, the first one on Friday at the end of the first week of the class. Quizzes occur on all weeks except those with a unit exam. Quizzes cover material from the lectures and assignments. They are meant to assess how well you are understanding concepts, retaining information, mastering concepts, and what we as instructors can do/modify in order to help you achieve your goals. Quizzes will be administered in ICON on specific days and available from 9:30 AM to 11:59 PM on that day, typically on Thursdays. Please see the course calendar for specific dates for the quizzes, labeled Quiz 1 through Quiz 12.

Once started, you have 20 minutes to complete each quiz consisting of 5 multiple-choice, matching, and/or fill-in the blank questions and worth 14 points total. Over the entire course, 18 overage points of 168 total points will be offered in quizzes, with a value of 150 points defined as full quiz credit. The overage points provide a cushion so that you can achieve the maximum quiz points should you miss a quiz or earn fewer points on a quiz.

Answers to the quiz questions will be available after the due date. There cannot be out of fairness to you and all other students, extensions to quiz deadlines. No make-up quizzes will be offered. For extended illnesses over multiple weeks, please contact Prof. Messerle by email (CHEM-1070-Spring2022@uiowa.edu) at that time for quiz modifications and accommodations.

You must complete quizzes individually as the student registered for this course. You may use your personal class notes (electronic or hardcopy formats) during the quiz. You are not permitted to get assistance from another individual or online resource, nor are you permitted to assist other students with the quiz. You are not permitted to take pictures or screen captures of the quiz, which Prof. Messerle can now detect electronically via new ITS resources. If you see what you think is a part of a quiz elsewhere, you should report it immediately to TA’s or Prof. Messerle. Any student getting assistance on a quiz or posting anything in texts, social media, and/or the internet about a quiz will be reported to CLAS for major academic misconduct.

Prof. Messerle, in particular, is focused on a fair learning and assessment environment for you and all other students in CHEM:1070.

In-person Discussion Activities (14):  
Discussion sections are limited to ≤ 28 students and will meet in-person (consult your class schedule on MyUI for your time and location). Discussion sections are very helpful, more-personal complements to lectures and allow you to ask questions (no question is "dumb"), gain problem-solving confidence, and work in peer teams. Your graduate student teaching assistant (TA) will facilitate learning teams by highlighting key course concepts and efficient problem-solving strategies. Your attendance and active participation are expected and contribute to your overall grade.

Discussion sections will not meet during the first week of classes (January 18-21). They do meet throughout the remainder of the semester, with 14 weeks counting towards your Discussion section points. Components of discussion include your individual worksheet, group peer-team Learning Catalytics (LC) online review activity, and an uploaded peer-team worksheet in order to promote discussion, support understanding, and develop key problem-solving skills. You will need a web-enabled device in order to connect to LC and Gradescope for each discussion activity. Teamwork completed in discussion must be submitted by a team member chosen as the team recorder using Gradescope. It is the responsibility of the recorder and all team members to check that their LC discussion document has been submitted within 30 min. of their discussion period.

You cannot participate in guided-inquiry activities and discussion if you are not present for your enrolled, in-person discussion section. During discussion sections, accessing Learning Catalytics from a remote location during that time will not be accepted for credit, and once detected by various means will be reported to CLAS as major academic misconduct.

Starting in the second week of the semester, 13 points can be earned weekly for your participation and performance in each discussion activity. A maximum of 160 discussion points can be earned for the course. The 13 possible points earned each week are based on your active participation and contributions to group activities (8 pts., broken down into 4 pts. active participation and 4 pts. quality
of worksheet responses), and performance on the LC review activity (5 pts). While 182 total points are offered through discussion activities, only a maximum of 160 points will be counted towards your grade. The possible 22 overdue points provide a cushion so that you can achieve maximum discussion points should you miss or have below-average performance on a discussion section review activity. If your absence is because of illness or a University-sanctioned reason, and you wish to make up the absence, you must contact your discussion TA in order to arrange attendance in a different section that meets in the same calendar week, which may mean that you will attend it prior to your regular discussion section. For extended illnesses, please contact your assigned TA and also Prof. Messerle.

**ALEKS Online Homework Assignments (15):**

*ALEKS* (Assessment and LEarning in Knowledge Spaces) is an adaptive, Web-based homework system that helps you to improve your problem-solving skills and conceptual understanding of chemistry while also remediating gaps in prerequisite knowledge. In order to access *ALEKS*, please follow the instructions provided on the CHEM:1070 ICON homepage. There are two main components of *ALEKS* that will be utilized in this course: Assignments and Pie Completion (sorry, not related to pizza making).

Fifteen *ALEKS* homework tasks (called “Objectives” in *ALEKS*) will be assigned through the semester, associated with the eBook course chapters (see course calendar for due dates). Each of the 11 chapters has one or two assignments that sum to a chapter point total in the range from 11 to 18 points. While a total of 165 points are available through *ALEKS* assignments, only a maximum of 150 points will be counted towards your grade. The 15 overdue points provide a cushion so you can still achieve the maximum homework points should you be absent or have a below-average performance on an *ALEKS* homework assignment. There will be no extensions to *ALEKS* homework deadlines. For extended illnesses over multiple weeks, please contact your assigned TA and also Prof. Messerle.

Because of the adaptive nature of *ALEKS*, you must first complete an Initial Knowledge Check assessment before any assignments are released. The Initial Knowledge Check takes approximately 30-45 minutes to complete and helps *ALEKS* software to determine your prerequisite knowledge. The results of your Initial Knowledge Check and how you progress through subsequent assignments will determine the total number of questions per assignment. Therefore, you may not have the same number of questions for an assignment compared to other students in the course.

If you do not complete an assignment before the specified deadline, *ALEKS* requires you to finish certain questions from prior assignments that it deems as necessary prerequisite knowledge for the current assignment. Any questions deemed as prerequisite knowledge must be completed before *ALEKS* releases the rest of the questions from the current assignment, and no credit will be given back to the original assignment when those questions were introduced. Therefore, it is in your best interest to start well before the deadline and work in *ALEKS* on a regular basis in order to complete all assignments prior to their deadlines. Otherwise, you will quickly fall behind in points. Prof. Messerle will create two-part assignments for several more information-rich chapters in order to help you work in *ALEKS* regularly. Further details on how *ALEKS* works can be found on the CHEM:1070 ICON site.

**ALEKS Online Pie Completion** throughout the semester.

As you complete your assignments, your Pie Chart will fill in. *ALEKS* will switch to “Open Pie Mode” if you complete all the topics in the current homework assignment before the due date and before the next assignment is released. In Open Pie Mode, you can return to previous topics that you missed or left incomplete, review previous topics, and/or work ahead on upcoming topics. Additionally, several Open Pie Mode times may be scheduled before each midterm exam and before the final exam. When you return to previous assignments during Open Pie Mode and complete missed topics, points do not add to the overdue homework assignment; rather, progress is shown toward pie completion. For this course component, a maximum of 40 points will be assigned if you achieve 85% or greater completion of your pie chart. If you complete < 85% of your pie chart, points will be scaled back according to the < 85% achieved.
**Lecture Participation and Learning Catalytics (LC):**

Lectures may be recorded and delivered via video if technical support is provided. Once available, you may watch the recorded Tuesday and Thursday lectures throughout the semester.

Prof. Messerle will award up to 5 bonus points to each unit exam based on your level of participation in the in-lecture LC questions. If you actively participate and submit your LC answers in each class period before a midterm exam, bonus extra-credit points may be awarded based on LC participation. These bonus point opportunities apply to Unit Exams 1-3, so this means that up to 15 extra points can be awarded throughout the semester. For LC lecture participation to count, you must submit your answers for a particular lecture before 8:00 AM of the next lecture day (e.g., answers to Tuesday’s LC lecture questions are due Thursday before 8:00 AM).

**In-Person Exams (4):**

There are three 1½-hour unit exams and a 2-hour cumulative final exam. All exams will be closed book, closed notes, and given in-person in MacBride Hall Auditorium (AUD MH). Unit exams consist of a combination of multiple-choice and free-response questions, the latter graded by graduate student TA’s using Prof. Messerle’s rubric for each exam’s free-response question. The multiple-choice portion of exams are graded on the number of correct answers, with no penalty for guessing. The free-response portions can earn no, partial, or full credit.

The final exam will be cumulative and consist of only multiple-choice questions, no free-response questions. Exams must be completed individually by you as registered for this course.

- **UNIT 1 Exam:** Wednesday February 9 (02/09/2022) 6:30 PM - 8:00 PM AUD MH
- **UNIT 2 Exam:** Wednesday March 9 (03/09/2022) 6:30 PM - 8:00 PM AUD MH
- **UNIT 3 Exam:** Wednesday April 20 (04/20/2022) 6:30 PM - 8:00 PM AUD MH
- **FINAL EXAM:** Date, time to be announced by Registrar (Cumulative, content from all Unit Exams)

**You will need to bring the following items to the exam site:**
- several #2 pencils (wood or mechanical),
- an eraser,
- a blue or black ink pen,
- your University photo ID,
- and a basic (non-graphing, non-communicating scientific calculator (e.g., TI30Xa or TI-30XIIS).

The instructors will provide a printout of the class’s equation sheet, periodic table, and if necessary, blank scratch paper. Graphing calculators, programmable calculators, data transmitting devices (e.g. cell phone), and/or wearable technology capable of transmitting or receiving communications (e.g. smartwatch) **MUST BE PLACED** in "airplane mode" or "silent mode" and stowed under your seat, along with earphones of any type, during the exam.

Make-up exams or rescheduling **WILL NOT BE OFFERED** in order to accommodate personal holiday or travel plans. Please see the section below on Make-Up Examinations for policies and procedures concerning missed exams.

Students are not permitted to obtain assistance from any other individual, online resource, or sheets of file cards with info during any exam, nor are students permitted to assist other students during the exam. Any student, and the communicating student, getting assistance on an exam or posting anything in texts, social media, and/or the internet about an exam during the examination period will be both reported to CLAS for major academic misconduct.

**Course Resources**

**Course Website:**

CHEM 1070 – Iowa Courses Online (ICON) website URL = http://icon.uiowa.edu/. Use your Hawk ID and Hawk ID password to log in. This website includes links to ALEKS (homework), Learning Catalytics, and an eText version of the textbook. Lecture notes, possible lecture recordings, sample exams, ICON quizzes, already-administered discussion worksheets, course and exam announcements, and other info will be posted on ICON, so Prof. Messerle and your TA’s encourage you to check ICON frequently.
Course Administration – Chemistry Center:
Contact the Chemistry Center (E225 CB) for drop/add signatures, section changes, make-up exam scheduling, tutor lists, submitting SDS accommodation letters, and general questions. Chemistry Center contact information: 319-335-1341, chemistry-center@uiowa.edu. Chemistry Center manager is Trent Tappan. Hours are Monday-Thursday 8 AM – 5 PM and Friday 8 AM – 4:30 PM.

Teaching Assistant (TA) Drop-in Office Hours:
Discussion TA’s have scheduled in-person or virtual drop-in office hours weekly, at times and days listed on page 1. Any TA for this course will be able to assist you in virtual or in-person office hours, regardless of whether they are your assigned TA for your discussion section.

Additional Instructional and Tutoring Resources:
The following University resources may be helpful to you throughout the semester. These services are offered outside of the purview of the Department of Chemistry. Please contact the individual resource to inquire about your eligibility and/or whether some resources are offered in Spring 2022.
Supplemental Instruction is provided by the UI Office of Academic Support and Retention and begins Sunday January 23. The Supplemental Instructor for CHEM:1070 is Missy Uehara. She will be available on the following days and times in the Academic Resource Center (ARC), located on the ground floor of the IMU near Java House and Hills Bank, or virtually:
- Sundays 3:00-3:50 PM (in person, at ARC)
- Tuesdays 6:00-6:50 PM (virtual - please sign in using the following link)
  https://apps.its.uiowa.edu/swipe2/site/arc/signin/virtual/genchem1
- Wednesdays 4:30-5:20 PM (in person, at ARC)

Tutor Iowa:  http://tutor.uiowa.edu
You may be eligible for additional support through the following:
Athletics Student Tutoring:  https://academics.hawkeyesports.com/academic-success
College of Engineering Tutoring: https://engineering.uiowa.edu/current-students/academic-support-and-tutoring/engineering-tutoring
Nursing/Pre-Nursing Academic Support: https://nursing.uiowa.edu/diversity/academicsupport
TRIO Student Support Services: https://diversity.uiowa.edu/programs/student-support/trio-student-support-services

Course Policies & Expectations
The following policies apply to you and all other students registered in this course.

Makeup Exams: In order to qualify for a make-up examination, your exam absence must be the result of illness, religious obligations, recognized University activities, unavoidable circumstances, or have prior instructor permission (see link for further explanation of recognized or unavoidable circumstances: https://clas.uiowa.edu/faculty/student-attendance-and-absences). In order to request a make-up exam for known conflicts, such as recognized University activities or religious obligations, you must complete the online request form 5 days before the exam date and should include supporting documentation. In order to request a make-up exam because of unavoidable circumstances, such as illness, you must complete the online Makeup Exam Request form within 5 days before or after the missed exam and must include supporting documentation. A link to the request form is available on ICON and here (https://forms.office.com/r/EjWUMU1ABu). The decision as to the acceptability of a make-up request rests with Prof. Messerle, and a point penalty may be imposed. Work, vacation, or other travel plans are NOT recognized as valid excuses for a make-up exam. Penalties will be assigned by Prof. Messerle, up to and including a zero score on the exam, for exam make-ups not meeting these requirements, out of fairness to all students.

Make-up exams are comparable to the regular unit exams, but you will not have permanent access to the make-up exam for future studying. Instead, please contact the instructors to arrange a time to review your make-up exam during drop-in office hours; you will be provided a copy of the regular unit exam questions given to the remainder of the students. Make-up exams will be given in-person in W290 CB (same as the class lecture room) at the days and times listed below.
Make-up Exam #1: Friday, February 18 (2/18/2022) 6:00 PM - 7:30 PM  W290 CB
Make-up Exam #2: Friday, March 25 (3/25/2022) 6:00 PM - 7:30 PM  W290 CB
Make-up Exam #3: Friday, April 29 (4/29/2022) 6:00 PM - 7:30 PM  W290 CB

Final Exam Conflicts: The final exam will be taken in person at the scheduled date and time announced by the Registrar around the fifth week of the semester. Until the final examination schedule has been published and all make-up final examination arrangements have been completed, you must be available on-campus from the first final exam period until the last final exam period of the entire final exam week. If you have two final examinations scheduled for the same period or more than three examinations scheduled for the same day, you may file a request for a change of schedule before the published deadline (https://registrar.uiowa.edu/fall-2021-exam-information) at the Registrar’s Service Center, 17 Calvin Hall, M–F 8:00 AM–4:30 PM (319-384-4300). For final exam conflicts during the Spring 2022 semester, the course having the lower department alphabetical letter will take precedence.

Classroom Expectations: You must comply with University policies regarding appropriate classroom behavior, as outlined in the Code of Student Life. In the event that you disrupt the classroom environment through your failure to comply with the reasonable directive of Prof. Messerle or a TA, Prof. Messerle has the authority to ask you to immediately leave the space for the remainder of the class period. Additionally, the instructor will report the incident to the Office of Student Accountability for the possibility of additional follow-up.

Communications: You will receive frequent communications from the instructors (via course ICON “Announcements”). You should check the ICON Discussion board first, as common questions may be addressed there. You can expect to receive responses to your inquiries within 24-48 hours, unless part of the time is over a weekend including that Friday. You are responsible for official correspondence sent to the course's UI email address CHEM-1070-Spring2022@uiowa.edu, and you must use this address for all communication within UI (Operations Manual, III.15.2).

Academic Misconduct: The College of Liberal Arts and Sciences's academic misconduct policy is available in the Student Academic Handbook. Academic misconduct may result in a grade reduction and/or other serious penalties, up to and including expulsion from the University.

Each of the items below describes your instructors's, including Prof. Messerle's, expectations concerning collaborative work. Some majors, and some cultures, approve of extensive collaboration (bordering on cheating from a US perspective) such that your contribution(s) are indistinguishable from that of others in the course. These do not pertain to CHEM:1070. If you have any questions or are unclear about the following descriptions, you must contact one of your instructors, including Prof. Messerle.

Examinations: Cheating will not, without exception, be tolerated. Prof. Messerle has dealt, with considerable sadness, with several cheating incidents (including one notable case of a student in Principles of Chemistry II using a small file card with 4-point font details of the entire course, probably sellable on eBay, and hurting that student's future acceptance into the College of Pharmacy) that impacted students's future education at UI and future career. Most cheating examples were pointed out to Prof. Messerle, during exams, by concerned students in these classes.
In-person exams are closed book/notes and are to be completed individually by you, the student registered for this course. Proof of your identity will be visually examined via your UI ID (please bring it to the exam site) by graduate student proctors and/or Prof. Messerle at the end of each exam when you turn in your exam and answer sheets. Any student getting assistance on an exam or posting anything in texts, social media, and/or the internet about an exam during the exam period will be reported to CLAS for major academic misconduct. You are expected to follow all instructions provided by Prof. Messerle and TA proctors during the exam. Sophisticated software has been developed by UI faculty that can detect cheating patterns in submitted free response/multiple question answer bubble sheets based on test site geolocation (i.e., where you were sitting).

ALEKS homework: You must complete your own ALEKS homework. It is designed to help you succeed on the subsequent exam. For your ultimate benefit in terms of exam performance, we encourage you to discuss problem-solving strategies with Prof. Messerle, TA’s, and in groups of other students, but questions must be answered individually by you. Not all students will have the same questions or same number or order of questions in ALEKS. TA’s and Prof. Messerle’s drop-in office hours, and an SI student’s assigned hours, are some of the resources that are available to help you gain the necessary understanding and problem-solving skills to successfully complete assignments in this course and to develop your scientific aptitude.

ICON Quizzes: Quizzes are to be completed individually by you, as registered for this course. You can use your personal class notes (electronic or hardcopy formats) during a quiz. You are not permitted to get assistance from any other individual or online resource, nor are you permitted to assist other students with the quiz. Students are not to take pictures of the quiz. If you see what you think is a part of a quiz, you must report it immediately to the instructors for your own sake. Any student getting assistance on a quiz or posting anything in texts, social media, and/or the internet about a quiz will be reported to CLAS for major academic misconduct.

Discussion: You will work in student groups in discussion for the Learning Catalytics review questions and associated worksheets. You are expected to actively participate in the group activities. When your group worksheet is uploaded for submission on Gradescope, you are identified on the worksheet and are expected to have attended class and discussion and also contributed that day. You are not permitted to ask other group members to submit your name on the work when you did not attend (this is monitored by your TA). Discussion group members are not permitted to include other students who did not attend. Any mischaracterization of group members’ contributions will be reported to CLAS for all student(s) involved in this academic misconduct. Prof. Messerle, in his own prior college and academic experiences, witnessed some of this and was very upset and reported, as a student with classmates, one egregious example concerning a pre-med student. He has noted many cheating examples as a UI faculty member, such as notes on the flap of a hat, the inside of a label on a transparent plastic water bottle, and many other examples. You should also be very upset if you witness this, so please report this anonymously. Fairness, as mentioned before, is paramount for Prof. Messerle, the Chemistry Department, TA’s, and other students in your class and the only way for you and your classmates to share a supportive educational experience that advances your personal educational goals.
**Due Dates and Missed Deadlines:** If you have an extended absence because of a University-sanctioned reason (e.g. illness, family emergency, etc.), you are strongly encouraged to contact Prof. Messerle via the course email CHEM-1070-Spring2022@uiowa.edu and your TA.

If you have an absence for a short period (i.e., a few days) and miss an assignment or course component, your opportunity for a make-up of a specific assignment will depend on the course component:

1) If a midterm exam is missed, you will need to fill out a Makeup Exam Request form on ICON within 5 days of the absence (see *Makeup Exams* section of syllabus for details).
2) If you miss a discussion, you must contact your TA ASAP to inquire about makeup possibilities (see *Discussion* section of syllabus for details); otherwise, the designed point overage in discussion may provide some cushion for your absence.
3) If you miss an ICON quiz, no make up opportunities are provided. The designed point overage can provide cushion for a missed quiz (see *ICON Quizzes*).
4) If an *ALEKS* assignment is not finished by the due date, you will be given credit for whatever work you completed by the deadline; extensions will not be granted. The included point overage can provide cushion for a missed *ALEKS* homework assignment. You will have an opportunity to work on past-due assignments, not for points toward the assignment, but rather for points toward your *ALEKS* pie completion (see the *ALEKS* section for more details).

**Netiquette:** The term “netiquette” refers to the do’s and don’ts of on-line communication. As it applies to any on-line, virtual portions of this course, you must communicate respectfully with each other, Prof. Messerle, TA’s, and the SI. Also, in order to prevent “Zoom bombing” (see Prof. Messerle if this term is unfamiliar to you), please do not share the Zoom meeting ID and passcode to anyone not attending this class.
# Tentative Course Calendar

Manage your time effectively in order to complete assigned course work according to the deadlines in the calendar below.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Day</th>
<th>Lectures for Timberlake Chapters; Quizzes; Unit Exams</th>
<th>Assignment*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 18</td>
<td>Tu</td>
<td>Introduction &amp; Syllabus; Chapter 1: Chemistry in Our Lives</td>
<td></td>
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<tr>
<td></td>
<td>20</td>
<td>Th</td>
<td>Ch. 1: Chemistry in Our Lives; Ch. 2: Chemistry &amp; Measurements</td>
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<tr>
<td></td>
<td>21</td>
<td>F</td>
<td></td>
<td>Quiz 1</td>
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<tr>
<td>2</td>
<td>24</td>
<td>M</td>
<td></td>
<td>ALEKS 1</td>
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<tr>
<td></td>
<td>25</td>
<td>Tu</td>
<td>Ch. 2: Chemistry and Measurements; Ch. 3: Matter and Energy</td>
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<tr>
<td></td>
<td>27</td>
<td>Th</td>
<td>Chapter 3: Matter and Energy</td>
<td>Quiz 2</td>
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<tr>
<td></td>
<td>28</td>
<td>F</td>
<td></td>
<td>ALEKS 2</td>
</tr>
<tr>
<td>3</td>
<td>Feb 1</td>
<td>Tu</td>
<td>Chapter 4: Atoms and Elements</td>
<td>ALEKS 3</td>
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<tr>
<td></td>
<td>3</td>
<td>Th</td>
<td>Chapter 4: Atoms and Elements</td>
<td>Quiz 3</td>
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<td>8</td>
<td>Tu</td>
<td>Chapter 4: Atoms and Elements, and Review</td>
<td>ALEKS 4</td>
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<tr>
<td>4</td>
<td>9</td>
<td>W</td>
<td></td>
<td>EXAM 1</td>
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<td></td>
<td>10</td>
<td>Th</td>
<td>Chapter 5: Nuclear Chemistry</td>
<td>Quiz 4</td>
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<td></td>
<td>15</td>
<td>Tu</td>
<td>Chapter 5: Nuclear Chemistry</td>
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<tr>
<td></td>
<td>16</td>
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<td>ALEKS 5</td>
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<td>17</td>
<td>Th</td>
<td>Chapter 6: Ionic and Molecular Compounds</td>
<td>Quiz 6</td>
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<tr>
<td>6</td>
<td>22</td>
<td>Tu</td>
<td>Chapter 6: Ionic and Molecular Compounds</td>
<td>Quiz 5</td>
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<tr>
<td></td>
<td>24</td>
<td>Th</td>
<td>Chapter 6: Ionic and Molecular Compounds</td>
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<tr>
<td></td>
<td>25</td>
<td>F</td>
<td></td>
<td>ALEKS 6 Part 1</td>
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<tr>
<td>7</td>
<td>28</td>
<td>M</td>
<td></td>
<td>ALEKS 6 Part 2</td>
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<tr>
<td></td>
<td>Mar 1</td>
<td>Tu</td>
<td>Chapter 7: Chemical Reactions and Quantities</td>
<td>Quiz 7</td>
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<td>Chapter 7: Chemical Reactions and Quantities</td>
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<td>8</td>
<td>Tu</td>
<td>Chapter 7: Chemical Reactions and Quantities, and Review</td>
<td>Quiz 8</td>
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<td></td>
<td>9</td>
<td>W</td>
<td>Exam 2 – Unit 2 (Ch. 5-7) at 6:30-8:00 PM, AUD MH</td>
<td>EXAM 2</td>
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<tr>
<td></td>
<td>10</td>
<td>Th</td>
<td>Chapter 8: Gases</td>
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<td></td>
<td>12-20</td>
<td></td>
<td>SPRING BREAK</td>
<td>Memorize Periodic Table</td>
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<tr>
<td>9</td>
<td>22</td>
<td>Tu</td>
<td>GUEST LECTURER: Prof. Mouna Maalouf; Chapter 8: Gases</td>
<td>Quiz 9</td>
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<tr>
<td></td>
<td>24</td>
<td>Th</td>
<td>Chapter 9: Solutions</td>
<td></td>
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<tr>
<td></td>
<td>25</td>
<td>F</td>
<td></td>
<td>ALEKS 8</td>
</tr>
<tr>
<td>10</td>
<td>29</td>
<td>Tu</td>
<td>Chapter 9: Solutions</td>
<td>Quiz 10</td>
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<tr>
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<td>31</td>
<td>Th</td>
<td>Chapter 9: Solutions</td>
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<td>April 1</td>
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<td>ALEKS 9 Part 1</td>
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<td>11</td>
<td>5</td>
<td>Tu</td>
<td>Chapter 9: Solutions</td>
<td>Quiz 11</td>
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<td>7</td>
<td>Th</td>
<td>Ch. 9: Solutions; Ch. 10: Reaction Rates and Chemical Equilibrium</td>
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<tr>
<td>12</td>
<td>12</td>
<td>Tu</td>
<td>Chapter 10: Reaction Rates and Chemical Equilibrium</td>
<td>Quiz 10</td>
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<td>14</td>
<td>Th</td>
<td>Chapter 10: Reaction Rates and Chemical Equilibrium</td>
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<td>19</td>
<td>Tu</td>
<td>Chapter 10: Reaction Rates and Chemical Equilibrium, and Review</td>
<td>ALEKS 10</td>
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<tr>
<td>13</td>
<td>20</td>
<td>W</td>
<td>Exam 3 – Unit 3 (Ch. 8-10) at 6:30-8:00 PM, AUD MH</td>
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<td></td>
<td>21</td>
<td>Th</td>
<td>Chapter 11: Acids and Bases</td>
<td>Quiz 12</td>
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<td>26</td>
<td>Tu</td>
<td>Chapter 11: Acids and Bases</td>
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<td>Th</td>
<td>Chapter 11: Acids and Bases</td>
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<tr>
<td>14</td>
<td>May 3</td>
<td>Tu</td>
<td>Chapter 11: Acids and Bases</td>
<td>Quiz 12</td>
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<td></td>
<td>5</td>
<td>Th</td>
<td>Catch-up Day &amp; Review; LAST LECTURE DAY</td>
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<td>6</td>
<td>F</td>
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<td></td>
<td>9-13</td>
<td></td>
<td>FINAL EXAM (date, time announced by Registrar by 5th week)</td>
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</tbody>
</table>

*ALEKS Homework, Discussion Worksheets, and ICON quiz due dates will be displayed within ALEKS and on ICON. All out-of-class assignments are due at 11:59 PM on due date unless otherwise indicated.*
College of Liberal Arts and Sciences Policies

Home of the Course: The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the course’s add and drop deadlines, the “second-grade only” option (SGO), and other undergraduate policies and procedures. Different UI colleges may have other policies or deadlines. See https://clas.uiowa.edu/students/handbook. Questions? Contact CLAS at clas@uiowa.edu or 319-335-2633.

Attendance and Classroom Expectations: You are responsible for attending class and for knowing your instructor’s attendance policies, which vary by course and content area. You are expected to attend class and to contribute to its learning environment in part by complying with University policies and directives regarding appropriate classroom behavior or other matters.

Absences: You are responsible for communicating with instructors as soon as you know that an absence might occur or as soon as possible in cases of an illness or unavoidable circumstance. Students can use the CLAS absence form to help communicate with instructors who will decide if the absence is excused or unexcused; the form is located on ICON within the top banner under “Student Tools.” Delays by students in communication with an instructor could result in forfeit of what otherwise might be an excused absence (https://clas.uiowa.edu/students/handbook/attendance-absences).

Absences: Illness, Unavoidable Circumstances, and University Sponsored Activities: If you are ill, in an unavoidable circumstance affecting academic work, or miss class because of a University-sponsored activity, you are allowed by UI policy to make up a missed exam. Documentation is required by the instructor except in the case of a brief illness. Students are responsible for communicating with instructors as soon as the absence is known (https://opsmanual.uiowa.edu/students/absences-class#8.1).

Absences: Holy Days: Reasonable accommodations are allowed for students whose religious holy days coincide with their classroom assignments, tests, and attendance if the student notifies the instructor in writing of any such religious Holy Day conflicts within the first days of the semester and no later than the third week. (See the UI Operations Manual, https://opsmanual.uiowa.edu/students/absences-class#8.2).

Absences: Military Service Obligations: Students absent from class because of U.S. veteran or U.S. military service obligations (including military service-related medical appointments, military orders, and National Guard service obligations) must be excused without penalty. Instructors must make reasonable accommodations to allow these students to make-up exams or other work. Students must communicate with their instructors about the expected possibility of missing class as soon as possible. (For more information, see https://opsmanual.uiowa.edu/iv-8-absences-class%C2%A0-%20).

Academic Misconduct: All undergraduates enrolled in courses offered by CLAS have in essence agreed to the College’s Code of Academic Honesty. Academic misconduct affects your grade and is reported to the College, which applies an additional sanction up to or including suspension from UI. Outcomes about misconduct are communicated through UI email (https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code).

Academic Accommodations for Students with Disabilities: UI is committed to providing an educational experience that is accessible to all students. You may request academic accommodations for a disability (e.g., mental health, attention, learning, vision, and a physical or health-related condition) through the Student Disability Services (SDS) office. You are responsible for discussing specific accommodations with the instructor. Note that accommodations are not granted retroactively but from the time of your request to the instructor onward; additionally, accommodations must be requested at least two weeks in advance of the related assignment or exam (https://sds.studentlife.uiowa.edu/).
Class Recordings: Privacy and Sharing: Course lectures and discussions are sometimes recorded or live-streamed. These are only available to students registered for the course and are the intellectual property of the faculty member. These materials may not be shared or reproduced without the express written consent of the instructor(s). You must not share these recordings with those who are not enrolled in the course; likewise, you must not upload recordings to any other online environment. Doing so is a breach of the Code of Student Conduct and could be a violation of the Federal Education Rights and Privacy Act (FERPA); also see https://dos.uiowa.edu/policies/code-of-student-life/.

Communication: UI Email: You are responsible for all official correspondences sent to your UI email address (uiowa.edu), and you must use this address for any communication with instructors or staff in the UI community (Operations Manual, III.15.2). Emails should be respectful and brief, with complex matters addressed during the instructor’s drop-in hours, for example. Faculty are not expected or required to answer email after 5:00 PM or during weekends.

Complaints about Academic Matters: If you have a complaint about a grade or a related academic issue, you should first visit with the instructor and then with the course supervisor (if one is assigned), and next with the Chair (DEO, Department Executive Officer) of the department or program offering the course. If not resolved, you may bring your concerns to the College of Liberal Arts and Sciences: https://clas.uiowa.edu/students/handbook/student-rights-responsibilities.

Final Examination Policies: The final exam schedule is published during the fifth week of the spring semester; you are responsible for knowing the date, time, and place of your final exams. You should not make travel plans until knowing this information. If you have exams scheduled on the same day and time or you have more than two final exams on the same day, please visit this page for how to resolve these problems by the given deadline: https://registrar.uiowa.edu/makeup-final-examination-policies. No exams may be scheduled the week before finals; some exception, however, has been made for labs, language courses, and off-cycle courses (https://registrar.uiowa.edu/final-examination-scheduling-policies).

Free Speech and Expression: The University of Iowa supports and upholds the First Amendment protection of freedom of speech and the principles of academic and artistic freedom. We are committed to open inquiry, vigorous debate, and creative expression inside and outside of the classroom. Visit Free Speech at Iowa for more information on the University’s policies on free speech and academic freedom (https://freespeech.uiowa.edu/).

Mental Health: You are encouraged to seek help as a preventive measure or if feeling stressed or overwhelmed. You should talk to your instructors for guidance with specific class-related concerns and are encouraged to contact University Counseling Service (UCS) at 319-335-7294 during regular business hours to schedule an appointment. UCS offers group and individual therapy as well as counseling for couples about relationships, and if necessary makes referrals to other resources (https://counseling.uiowa.edu/). Student Health can also address related concerns (https://studenthealth.uiowa.edu/). These visits are free to you. After hours, you are encouraged to call the Johnson County Community Crisis Line at (319) 351-0140 or dial 911 in an emergency.

Nondiscrimination in the Classroom: The University of Iowa is committed to making the classroom a respectful and inclusive space for people of all gender, sexual, racial, religious, and other identities. Toward this goal, you are invited in MyUI to optionally share your names and pronouns that you would like your instructors and advisors to use to address you. The University of Iowa prohibits discrimination and harassment against individuals based on race, class, gender, sexual orientation, national origin, and other identity categories indicated by the University’s Human Rights policy. Contact the Office of Equal Opportunity and Diversity at https://diversity.uiowa.edu/division/office-equal-opportunity-and-diversity-eod.

Sexual Harassment: Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community are expected to conduct themselves in a manner that maintains an environment free from sexual harassment and sexual misconduct. If you experience sexual harassment/misconduct, you are strongly encouraged to report the incidents and to seek help (https://osmrc.uiowa.edu/).