CHM2045 GENERAL CHEMISTRY I UFO
SUMMER 2022

INSTRUCTOR INFORMATION

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Email</th>
<th>Office Location &amp; Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Stacey-Ann Benjamin</td>
<td>Email in Canvas only</td>
<td>Virtual Office Hours via Zoom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tuesdays 6:00 - 7:00 pm</td>
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<td></td>
<td></td>
<td>Thursdays 9:00 - 10:00 am</td>
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<tr>
<td><strong>Graduate Teaching Assistant</strong></td>
<td>Email in Canvas only</td>
<td>Virtual Office Hours via Zoom</td>
</tr>
<tr>
<td>Fanran Huang</td>
<td></td>
<td>Wednesdays 1:00 - 3:00 pm</td>
</tr>
</tbody>
</table>

GENERAL INFORMATION

CREDITS/PREREQUISITES

3 credits. Prerequisites: a C or higher in MAC1147 or the equivalent or higher and a passing score on the ALEKS Math placement exam or a C or higher in CHM1025. Check the Course Catalog for math requirements to continue in general chemistry sequence.

MEETING TIMES

This is a 100% online course. Virtual office hours will be scheduled weekly throughout the semester and can be made by appointment.

DESCRIPTION

CHM 2045 is the first semester of the CHM2045/CHM2045L and CHM2046/CHM2046L sequence. Stoichiometry, atomic and molecular structure, the states of matter, reaction rates and equilibria. A minimum grade of C is required to progress to CHM2046.

FIRST DAYS

Log into Canvas and access the course. You should check frequently for new Announcements and/or emails containing important information and reminders. Click on the Syllabus tab. Click on Modules and read all the information under the Orientation section as many of your questions are answered there.

ALEKS Prep: We highly recommend completing the ALEKS Prep course, which counts towards your overall course grade, before starting to work on the ALEKS HW for this course. ALEKS Prep is a completely different course in Aleks, from the ALEKS homework you’ll be doing this semester. You should begin and complete the ALEKS Prep as early as possible. Information on how to access the Prep at no additional charge was emailed to your UF email accounts.
COURSE MATERIALS

TEXTBOOK


See the ALEKS page in Canvas in the Orientation Module for a walkthrough video for instructions on viewing the textbook and navigating within ALEKS.

The ALEKS platform has its own textbook, the ALEKSPEDIA; the textbook for this course, however, is the Silberberg book. We recommend solving end of chapter problems for practice as the course progresses.

CALCULATORS

A nonprogrammable, scientific calculator is required for this course. Calculators are allowed during exams but may NOT be shared. Graphing and programmable calculators are NOT permitted during exams. Cell phones and other electronic devices may NOT be used for calculations.

WEBCAM/MICROPHONE/SPEAKERS

You are required to have a functioning webcam, microphone, and speakers for proctored exams. See the technical requirements at www.proctoru.com. Verify that your operating system is compatible with ProctorU. (ProctorU currently does not support Chromebooks, for example.)

COURSE TECHNOLOGY

The student may require Adobe Acrobat Reader, Adobe Flash Player, Microsoft Silverlight and other software. You may wish to use Microsoft Excel or Word for written assignments. Free tutorials on many software applications can be found at Lynda.com. All UF students are expected to have reliable access to a computer, especially for an online course. ProctorU has specific hardware/software requirements: http://www.proctoru.com/tech.php. Check the support page for ALEKS for technical support using their platform: https://mhedu.force.com/aleks/s/.

COURSE COMMUNICATIONS

GENERAL QUESTIONS

General course questions should be posted to the General Help Forum in Canvas. The instructor response time is 24-48 h during the work week (expect to wait until Monday for questions posted on a Friday). Chapter-specific questions should be posted to the appropriate Study Room; participation in the Study Rooms is for credit.

I encourage you to post questions related to ALEKS homework or end of chapter questions you’re working on to the Study Rooms. The homework isn’t meant to be a test, it’s a learning tool. For the best response, take a screenshot of your question and/or the solution you propose. The more information you provide, the easier it is for your instructor/another student to help.

PRIVATE OR GRADE-RELATED QUESTIONS
Direct these to your instructor via the mail function in Canvas. Do not email outside of Canvas to your instructor’s external email address - we aren’t permitted to discuss grade related questions outside of Canvas. You will be asked to resend the query through Canvas.

**COURSE POLICIES**

**QUIZZES**

Sectional quizzes are delivered in Aleks. These quizzes are not proctored, but are timed, and are subject to the Honor Code. When you’re ready to begin, simply click the link. You will have three attempts at each quiz, with the highest score counting for credit.

Graded quizzes can be completed late, with a late penalty of 50% (that is, - 5 points in the Canvas gradebook) deducted from your score, up to four days late submission. Note that if a quiz is submitted even 1 s after the due date/time, the late penalty will apply.

Practice quizzes are provided in Canvas, and do not count for credit.

**EXAMS**

Three progress exams and one cumulative final exam are administered in Canvas. Due to the nature of this course’s content, the topics tested on each progressive exam are cumulative so questions may include previously covered concepts which the student is expected to have already mastered. You must use a non-graphing non-programmable scientific calculator on exams (with log, ln, root, and exponent (scientific notation) functions). Your exams are remotely proctored by ProctorU. In-person examinations are not an option for this 100% online course. It is your responsibility to register with ProctorU and reserve an exam time on the assigned dates during available times:

Exam 1: May 31st;   Exam 2: June 16th;   Exam 3: July 18th;   Final Exam: August 3rd

To do so click on the ProctorU tab in Canvas. Reservations (exam start times) are available for each Progress exam beginning at 6 pm through 8:00 pm only. The final Exam will be available beginning at 7 am through 9 am.

If you fail to make a reservation sufficiently in advance (>72 h) a late fee may be assessed by ProctorU, and you may have difficulty obtaining a desirable time. Failure to reserve a time slot in advance is not an accepted excuse for a late exam.

If you encounter technical difficulties with ProctorU, contact ProctorU directly. If you have trouble navigating their reservation system, call them for assistance.

**EXAM POLICIES**

If you suspect an error in the grading of an exam, it is your responsibility to notify the lecturer in via email within one week of the grade being posted on Canvas for consideration. No grade change considerations or changes will be made after this one week period.

No makeup “do over” progress exams will be given for any reason. If you must be absent for an exam due to a documented and approved academic or UF athletic conflict, bring the documentation to your instructor at least one week prior to the scheduled exam and an early conflict exam will be scheduled for you. If you are absent for an exam due to an unpredicted documented medical reason, you must contact
the instructor as soon as possible and have your excuse verified by the Dean of Students office. Your missed exam score will then be replaced by your pro-rated final exam score when calculating your final grade. More information on this policy can be found in the General Chemistry Exam Absence Policy.

To alleviate the stress of potential issues that do not fall under officially-sanctioned absences, we have incorporated an “average/replace” policy (the lowest of the three progress exams will be replaced by the average of the three progress exams). This policy will help to minimize the impact of a single poor performance, but it will not completely disappear.

ASSIGNMENTS AND POLICIES

ALEKS PREP

The Aleks Prep course is mandatory for all students who are enrolled in CHM2045. This prep course is separate from your regular CHM 2045 Aleks homework that you will be completing throughout the semester. The purpose of the Prep is to walk students through the chemistry needed for success in CHM2045 and will assign students work to fill any knowledge gaps that will put you at a disadvantage in the course. The Prep is performed using ALEKS Chemistry and your login information for ALEKS Chemistry is not the same as for ALEKS Math Placement - if you haven’t used ALEKS Chemistry before, you will need to set up a new account. If you used ALEKS Chemistry in CHM1025, you may use the same login information. Note: this is not your Gatorlink login, this is your ALEKS Chemistry login information. You still need to complete ALEKS Prep even if you’ve completed CHM1025 using ALEKS.

Since you’re already purchasing an ALEKS homework access code for this course, we provide the ALEKS Prep access code- which (again) is entirely separate from your regular ALEKS homework - to you at no additional charge. Instead of going through Canvas, you’ll go directly to https://www.aleks.com/ and register for the prep course using a different class code from your ALEKS homework.

The class code for the prep course is: U3JVP-C3DXL. Please follow the steps to complete registration.

2% of the final course grade will be based on the ALEKS Prep Course for Summer 2022, due 5/18/2022. ALEKS Prep % completion correlates to grade earned as follows:

<table>
<thead>
<tr>
<th>% ALEKS complete</th>
<th>0 - 69%</th>
<th>70 - 79%</th>
<th>80 - 89%</th>
<th>90 - 98%</th>
<th>99 - 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>% grade earned</td>
<td>0%</td>
<td>0.5%</td>
<td>1.0%</td>
<td>1.5%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

ALEKS OBJECTIVES

Access the electronic homework and eBook directly from within Canvas by navigating to Modules > ALEKS > ALEKS Science. A significant portion of your grade stems from on-time completion of equally weighted ALEKS Objectives. Whatever percentage of the topics you complete on time within an objective will count for credit - i.e. if you complete 7 of 10 topics within a particular objective assignment you will earn 70% credit for that objective, or 7/10 points for that objective. The average completion time is approximately 3 topics/h, system-wide in the ALEKS system. Plan your time accordingly.

ALEKS is set up in a specific manner - you will need to complete some topics in order to proceed to the next topic because topics and concepts in chemistry build on one another. There isn’t a way to disable this
setting. You are encouraged to work on assignments early and frequently for short periods of time, no more than 2 or 3 hours per sitting.

The one lowest ALEKS Objectives grade is dropped from your overall course grade. ALEKS objectives cannot be completed late for credit.

**ALEKS PIE**

A significant portion of your grade stems from completion of your ALEKS Pie by the date of your final exam (August 3rd @ 11:59 pm EST). The work you do on ALEKS Objectives counts towards this goal. You can catch up or work ahead on your pie progress during Open Pie periods. We’ve scheduled Open Pie for all students in the course over the Winter break. Whenever you complete an ALEKS Objective before its due date/time you also will enter Open Pie mode. Pie progress is calculated as (# topics completed/total # topics) * 100%. The pie progress % you view in ALEKS is a good estimate of this, but the precise value according to the calculation above is used in your grade calculation in Canvas.

**ALEKS LECTURE VIDEO ASSIGNMENT**

You will be assigned mandatory lecture videos to watch for specific topics from each chapter. You are required to view these videos before completing your quizzes, beginning with Quiz 3, in ALEKS. You are also encouraged to watch the videos prior to answering questions from the Chapter Problem Sets in Canvas. Watching the videos adds to your understanding of critical concepts in this course and will hopefully prompt you to go back and read/study sections of your text (eBook) should you need more clarification.

5% of the final course grade will be based on the video assignments and each lecture video assignment will remain open until the exam day for that chapter.

**CHAPTER PROBLEM SETS**

A portion of your grade stems from completion of chapter problem sets in Canvas. These problem sets are intended to provide additional robust questions aimed to enhance student understanding of the chemistry concepts covered in this course. Each set has a displayed deadline for earning full credit; you can earn up to 6% toward your grade by completing these assignments. You will have multiple attempts to answer the problem sets. Failure to access a problem set at least once before its due date will result in the loss of ability to access that set for the remainder of the semester. Students who miss a set deadline due to an excused absence can request an extension by contacting the instructor.

For technical help with assignment submissions contact the UF Help Desk.

The one lowest Chapter problem set score is dropped from your overall course grade.

Problem sets can be completed late, with a late penalty of 10% per day submitted late. Note that if a problem set is submitted even 1 s after the due date/time, the late penalty will apply.

**STUDY ROOMS**

The student is also expected to contribute to threaded discussions in topic-specific Study Rooms according to the advertised timeline in Canvas.

- You will post at least one question about a concept or problem from the worksheet, homework or your own study questions.
- You will answer at least one question posed by a classmate in the discussion thread. Your response should be thoughtful and provide evidence to support your answer, for example, in the form of a complete worked solution.

Initial discussion questions cannot be submitted for credit after a chapter’s study room deadline. There are no exceptions. Post early and check your post/response. Your initial post must be made at least one day before the study room deadline to allow other students enough time to view and respond to your question. A discussion response can be completed late, with a late penalty of 25% per day submitted late.

Emailed submissions are not considered for credit.

For technical help with discussions or assignment submissions contact the UF Help Desk.

The one lowest Study Room discussion grade is dropped from your overall course grade.

Note that if a participation (original post and/or follow up posts) is submitted even 1 s after the due date/time, no credit will be applied.

**PRACTICE ACTIVITIES**

Practice activities (Quizlet activities, practice quizzes, simulations, etc.) are provided in Canvas. Practice activities do not count for credit but offer additional avenues to increase understanding as you prepare for exams.

**CHECK-IN WITH INSTRUCTOR / OFFICE HOURS**

The student is expected to check in with the instructor via zoom office hours at least once every three weeks. These check-ins are intended to provide communication with your instructor to ensure that you are keeping up with the course material, to assist with solving practice questions, to address course related concerns, and to discuss best study practices. You will log in for check-in with your instructor via zoom conference and full credit will be awarded if a minimum of four (4) of those meetings take place. Zoom sessions will not be recorded by the instructor/TA and may not be recorded by students. As in all courses, unauthorized recording and unauthorized sharing of recorded material is prohibited.

**EXTENSIONS**

Note that all due dates for assignments are clearly posted in the course assignments of the Canvas page and reflect the most up-to-date information. The deadline for assignments is 11:59 p.m. on the day stated on the lecture schedule. All assignments/quizzes must be completed by the stated due date and time for credit. Extensions for assignments (exams are covered under the General Chemistry Exam Absence Policy) can be requested due to illness or emergent situations.

You will be asked to have your situation verified by the Dean of Students Office before such an extension is considered. Information on requesting an excuse note can be found here: https://care.dso.ufl.edu/instructor-notifications/

A Dean of Students note verifying documentation of illness or a personal matter must be provided for at least 50% of the days allocated for completion of the assignment (for example, if the duration of a Module is six days, documentation of illness or a personal matter should be provided for at least three of those days) for accommodations to be considered. Extensions will NOT be given because of technical or personal issues that occur within 24 hours of the assignment deadline.
Exam dates are firm, and all assignments must be completed by the last day of term.

**GRADING**

**GRADE POLICY**

Should a student wish to dispute any grade received in this class, the dispute must be in writing and be submitted to the instructor within 96 h of receiving the grade, and within 24 h of the Final Exam.

There is no extra credit available for this course beyond the generous dropped assignment policy. Grades are not rounded at the end of term. Exam grades or course grades are not curved. Take care to complete each assignment prior to its advertised due date and to submit assignments as directed. Contact the UF Help Desk for help with Canvas.

Assignments weights are as follows:

<table>
<thead>
<tr>
<th>Assignment Group</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALEKS Prep</td>
<td>2%</td>
</tr>
<tr>
<td>ALEKS Objectives</td>
<td>6%</td>
</tr>
<tr>
<td>ALEKS Lecture Video Assignments</td>
<td>5%</td>
</tr>
<tr>
<td>ALEKS Pie Progress</td>
<td>6%</td>
</tr>
<tr>
<td>Progress Exams (3 @ 15% each)</td>
<td>45%</td>
</tr>
<tr>
<td>Cumulative Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Chapter Problem Sets</td>
<td>6%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>6%</td>
</tr>
<tr>
<td>Study Rooms</td>
<td>2%</td>
</tr>
<tr>
<td>Check-in with Instructor</td>
<td>2%</td>
</tr>
</tbody>
</table>

Grade scale (note: there is no rounding to your score in Canvas):

<table>
<thead>
<tr>
<th>Letter</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>D+</th>
<th>D</th>
<th>D-</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutoff</td>
<td>90.0</td>
<td>86.0</td>
<td>83.0</td>
<td>80.0</td>
<td>77.0</td>
<td>73.0</td>
<td>69.0</td>
<td>66.0</td>
<td>63.0</td>
<td>60.0</td>
<td>&lt; 60.0</td>
</tr>
</tbody>
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**UNIVERSITY POLICIES**

**AUDIO/VIDEO PRESENCE POLICY**

Zoom Check-ins with the instructor and/or TA office hours sessions are not generally recorded. Should it be necessary to record a session, an announcement will be made in advance. Students who participate
with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during sessions and participate verbally are agreeing to have their voices recorded.

If you are not willing to consent to have your voice recorded, you will need to keep your mute button activated and communicate exclusively using the 'chat' feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

Full audio/video presence is required for proctored tests administered by Honorlock.

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting disability.ufl.edu/students/get-started. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

The student is responsible for scheduling the exam dates with the DRC. Students with disabilities should follow this procedure as early as possible. The DRC has 4 business day policy to submit Accommodated Testing Requests (ATRs). You must submit this documentation prior to submitting assignments or taking quizzes or exams. Accommodations are not retroactive; therefore students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida. The following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. Any student found cheating during an exam will receive a score of zero for the exam. For more information regarding the Student Honor Code, please see: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/

U MATTER, WE CARE

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter,
We Care team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing Staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**INCLUSIVE LEARNING ENVIRONMENT**

We embrace the University of Florida’s Non-Discrimination Policy, which reads, “The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinion or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans’ Readjustment Assistance Act.” We are committed to fostering an open and inclusive classroom and laboratory environment in our college, where every student, guest instructor and contributor feels valued. Multicultural and Diversity Affairs (MCDA) is a department within the Division of Student Affairs that celebrates and empowers diverse communities and advocates for an inclusive campus for all students across identities. If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office on Multicultural & Diversity Affairs Website: https://multicultural.ufl.edu/

**COUNSELING AND WELLNESS CENTER**

Visit [https://counseling.ufl.edu/](https://counseling.ufl.edu/) or call 352-392-1575 for information on crisis services as well as non-crisis services.

**FEEDBACK**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at [https://gatorevals.aa.ufl.edu/students/](https://gatorevals.aa.ufl.edu/students/). Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via [https://ufl.bluerica.com/ufl/](https://ufl.bluerica.com/ufl/). Summaries of course evaluation results are available to students at [https://gatorevals.aa.ufl.edu/public-results/](https://gatorevals.aa.ufl.edu/public-results/).

**NETIQUETTE**

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions, and chats. [http://biostat.ufl.edu/resources/e-learning-resources/e-learning-basics/etiquette-online/](http://biostat.ufl.edu/resources/e-learning-resources/e-learning-basics/etiquette-online/)

**GETTING HELP**

For issues with or technical difficulties with Canvas, contact the UF Help Desk: [https://lss.at.ufl.edu/help.shtml](https://lss.at.ufl.edu/help.shtml) (352)-392-HELP.

Other resources are available at [http://www.distance.ufl.edu/getting-help](http://www.distance.ufl.edu/getting-help) for Counseling and Wellness resources, disability resources, resources for handling student concerns and complaints, and library desk support.

**GENERAL EDUCATION**
This course satisfies the General Education requirement in the Physical Sciences.

PHYSICAL SCIENCE GENERAL EDUCATION PROGRAM OBJECTIVES

Physical science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the physical sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern physical systems. Students will formulate empirically-testable hypotheses derived from the study of physical processes, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

These objectives are accomplished through participation in the course, and individual work done on homework assignments and assessments.

GENERAL EDUCATION STUDENT LEARNING OUTCOMES

This course satisfies the General Education requirement in the Physical Sciences. A minimum grade of C is required for general education credit.

<table>
<thead>
<tr>
<th>Area</th>
<th>Institutional Definition</th>
<th>Institutional SLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTENT</td>
<td>Content is knowledge of the concepts, principles, terminology and methodologies used within the discipline.</td>
<td>Students demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Communication is the development and expression of ideas in written and oral forms.</td>
<td>Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.</td>
</tr>
<tr>
<td>CRITICAL THINKING</td>
<td>Critical thinking is characterized by the comprehensive analysis of issues, ideas, and evidence before accepting or formulating an opinion or conclusion.</td>
<td>Students analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems.</td>
</tr>
</tbody>
</table>

Naturally, all three areas of learning outcomes will be assessed in all categories of graded assignments administered in CHM 2045.

SPECIFIC GOALS OF CHM2045

You will be required to analyze scientific concepts and think critically. This means being able to answer both quantitative (mathematical) and conceptual (qualitative) problems in a limited period of time. Additionally, you will have to write and/or orally communicate on discussion assignments, written assignments, and in discussion with your instructor/TA. We will also demonstrate how these topics can be applied to the scientific method and how observation and experimentation leads us to the development of scientific theories. You will be required to utilize the methods of science as a logical means of problem solving through critical thinking. This means you must analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems. To ensure your competency in these concepts you will be required to complete quizzes and assignments that require critical thinking, analysis of problems, and drawing conclusions.

COURSE LEARNING OUTCOMES

A complete list of student learning outcomes is posted in Canvas.

ESSENTIAL SKILLS FOR SUCCESS IN CHM 2045
Critical Thinking: Critical thinking skills are essential in the general chemistry course. There are six criteria by which we promote critical thinking: 1. Information acquisition: Identifying and differentiating questions, problems and arguments. 2. Application: Assessing the suitability of various methods of reasoning and confirmation when approaching a problem. Students are taught to develop hypotheses and to find support and limitations associated with their hypotheses. 3. Analysis: Identifying and analyzing stated and unstated assumption and using logical reasoning to evaluate different viewpoints. 4. Synthesis: Students are encouraged to formulate questions and problems, construct arguments to address such questions and be able to effectively communicate conclusions. 5. Communication: In discussion of alternative points of view, students will be encouraged to criticize or defend their arguments with the use of logical reasoning and evidence. 6. Evaluation: Assessing the quality of evidence and reasoning to draw reasonable conclusions.

Mathematics: It is crucial in the general chemistry course to be competent in mathematics. Listed are the criteria by which we promote understanding and application of math: 1. Information acquisition: Students learn to select data that is pertinent to solving a problem. 2. Application: Use of algebraic, geometric and statistical reasoning to solve problems. 3. Analysis: Interpret and draw conclusions from formulas, graphs and tables. 4. Synthesis: To associate patterns and observations to more abstract principles and to consider specific applications of such principles. 5. Communication: Communicating information symbolically, graphically, numerically and verbally. 6. Evaluation: Estimate and verify solutions to mathematical problems to determine reasonableness, compare alternatives and select optimal results and understand the limitations of mathematical and statistical methods.

### TENTATIVE WEEKLY SCHEDULE

Note: this is designed to replicate F2F class

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
</table>
| May 9
Orientation
Module 1 (review) | 10
Module 2 (review)
Orientation Quiz | 11
Ch. 1 Quiz
Module 1 Study Room (SR) | 12
Module 2 Study Room (SR)
CH 1 & 2 Problem Set (PS) | 13
Ch. 2 Quiz
Finish ALEKS Prep by this date so can move on in ALEKS HW |
| Work on ALEKS Prep assignment | Work on ALEKS Prep assignment | Work on ALEKS Prep assignment | Work on ALEKS Prep assignment | |
| 16
Module 3
Lesson 3.1
Lesson 3.2 | 17
Lesson 3.3 | 18
Module 3/Ch. 3 SR & PS | 19
Ch. 3 Quiz
ALEKS HW Prerequisite Review | 20
Module 4
Lesson 4.1 |
| ALEKS Prep is due | | | | |
| 23
Lesson 4.2 | 24
Lesson 4.3 | 25
Mod 4/Ch. 4 SR & PS | 26
ALEKS HW Ch. 4 Ch. 4 Quiz | 27
Module 5
Lesson 5.1 |
<p>| | | | | |
| | | | | |
| 30 | 31 | June 1 | 2 | 3 |</p>
<table>
<thead>
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<th>Holiday</th>
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**DISCLAIMER**

This syllabus represents current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.