CHM 101 – GENERAL CHEMISTRY I
SYLLABUS – FALL 2022

Instructor*:* Dr. Maria Donnelly
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Office hours: Appointments are not required but students with appointments receive priority for the time slot they requested. I anticipate holding official office hours on Tuesdays, Wednesdays, and Thursdays each week, with specific times listed on URI's Starfish Success Net. You can also just drop in to ask questions if you see that I am available.

- Appointments can be made using Starfish
- Students should not sign up for more than 2 consecutive time slots, but are welcome to stay longer if no one else needs assistance
- For appointments outside office hours, email me for availability or just stop by my office to see if I am available. While fall semester labs are in session, I am generally on campus at least Tuesday – Friday from 8:00am until the end of the 2:00pm lab sessions.

Course Description
CHM 101 is a general chemistry course designed to introduce a variety of concepts and principles that are fundamental to the study of chemistry. Significant emphasis will be placed on mathematical skills and problem solving.

Resources & Required Course Materials

- **Textbook:** McGraw Hill Chemistry: Atoms First, Burdge/Overby, 4th Edition. (electronic or paper)
- **Brightspace & URI email:** Brightspace will be used to post grades and for official course communications; therefore, it is ESSENTIAL that you regularly check the Brightspace site and your URI email to ensure that you do not miss important information. You may need to opt into receiving email notifications from Brightspace. Brightspace will also contain links to course materials, some bonus assignments, and various other study resources.
- **Lecture Slides***:* **Partial** lecture presentations will be available through a link in Brightspace prior to each class meeting (or earlier). It is highly recommended that you bring a copy of these notes with you to class – they will provide an outline for you to use when taking notes that will help you to better focus on, and record, the information being discussed in class. Note that these are PARTIAL lecture notes. They are intended to assist you in your note-taking while in lecture – they are NOT a substitute for regular class attendance and will NOT supply all of the information that you will need to successfully pass CHM 101. For example, the partial presentations will include the example problems that we will cover in lecture, but they will not include the solutions to those problems.
- **Online Homework:** McGraw Hill's Connect; both the on-line homework and the Smart Book assignments are required as part of your grade. Information on how to access Connect can be found on the course Brightspace site.
- **Calculator:** CHM 101 is a math intensive course, and a scientific calculator will be an essential tool for lecture, exams, and homework assignments. **Graphing calculators with advanced functionalities, such as the ability to access the internet, capture images, communicate wirelessly, and display pdf and other non-text files, will not be allowed on exams.** Older graphing calculators, such as the TI-83, are acceptable. Newer models that are not able to access the internet, capture images, communicate wirelessly, etc., can also be used, but will require a sticker indicating that they are acceptable to use during exams, especially if they are visually similar to more advanced models. Information on how to obtain a sticker will be provided prior to the first exam. A limited number of basic scientific calculators will be available for use during exams. If you will need to borrow one of these calculators for your exams, and you let me know in advance, I will make sure that one is available for you. You will need to supply an ID to borrow a calculator; the ID will be returned to you when you turn in the calculator.

Class Meetings

- **Section 4:** Tuesday & Thursday, 9:30 – 10:45 am in Beaupre 100

Additional Study Help Resources

- **Beaupre Learning Center:** Teaching assistants keep regular office hours in the Learning Center (Beaupre 1st floor, room 115). This is a great place for students to study and work problems together, especially since it is conveniently located near the offices of most of the lecturers, including my own. The CHM 101 Brightspace site will contain a link to the schedule of TA office hours once that schedule becomes available.
- **Academic Enhancement Center (AEC):** The Academic Enhancement Center (AEC) offers face-to-face and online services to undergraduate students seeking academic support beginning Monday, September 12th, 2022. Services are based out of Roosevelt Hall, the Carothers Library room LL004, and online. Peer tutoring is available for STEM-related courses through drop-in centers and small-group tutoring. The Writing Center peer consultants offer feedback focused on supporting undergraduate writers at any stage of a writing assignment. The UCS 160 course and one-to-one Academic Skills Consultations offer strategies for improving studying and test-taking skills. Complete details about each of these programs, up-to-date schedules, contact information, and self-service study resources are all available on the AEC website, uri.edu/aec.

Disability Accommodations

Your access in this course is important. Please send me your Disability Services for Students (DSS) accommodation letter early in the semester so that we have adequate time to discuss and arrange your approved academic accommodations. If you have not yet established services through DAI, please contact them to engage in a confidential conversation about the process for requesting reasonable accommodations in the classroom. DAI can be reached by calling: 401-874-2098, visiting: web.uri.edu/disability, or emailing: dai@etal.uri.edu. We are available to meet with students enrolled in Kingston as well as Providence courses.

Grading & Testing Policies

Course grades will be determined by each student's performance on all assignments and exams. The final grade will be calculated as follows:

Online Homework, Smart Book, & Attendance Quizzes	15 %
4 Lecture Exams* (17 % each)	68 %
Final Exam	17 %
Total	**100%**

***YOUR IN PERSON FINAL EXAM SCORE WILL TAKE THE PLACE OF ANY EXAM MISSED DURING THE TERM** (i.e. it will count twice). For students who do not miss an exam, the final exam may take the place of their lowest lecture exam if the final exam grade is higher. **The purpose of this policy is to eliminate the need for make-up exams**.

Formula for calculating course average:

Course Average = (Exam Average * 0.85) + (Homework average * 0.15)

At the end of the semester, the exam average will include five exams (four lecture exams plus the final exam). The homework average includes homework, Smart Book, and attendance quizzes.

Lecture Exams will be given during class time in Beaupre 100. Students will be assigned a seat and given an exam with their name on it. **Students must sit in the assigned seat and take the exam given to them. MAKE SURE TO HAVE YOUR STUDENT ID WITH YOU ON EXAM DAYS.** Proctors will check your student ID when you hand in your exam to make sure that the correct student is taking each exam. All work must be shown to receive full credit on exam problems.

If you believe that there is an error in your exam grade, **you must bring your concern to my attention within 48 hours of the exams being handed back in class.** No grade changes will be considered after this time. Any request for re-grading must be submitted in writing along with the **complete original exam**, and the **entire exam** will be looked at during re-grading.

Students receiving disability accommodations, participating in **University sanctioned** events, or observing religious holidays may receive alternate testing accommodations. These arrangements require approved documentation. Written notification of a request for alternate testing

accommodations must be made **at least one full week prior to the scheduled exam**. Students with alternate testing accommodations will take their exams in the Academic Testing Center in Chaffee Hall. **If you are participating in a University activity that requires frequent travel (i.e. sports team, band, etc.), please check the exam schedule now and contact me as soon as possible if your travel will cause you to miss any exams so that appropriate arrangements can be made.**

Unannounced "quizzes" may be given periodically to help students evaluate their understanding of course material and to encourage students to attend class. Grades will be based on attendance ("attendance quizzes"), and one quiz grade will be dropped to eliminate the need for make-ups.

Grades in CHM 101 are based on a student's level of mastery of the material presented and must be earned by demonstrating proficiency in the required skills. Grades are not negotiable and are NOT determined by what is required by a student's desired degree program. The following grading scale will be used:

≥90% = A/A-; 80-89% = B-/B/B+; 66-79 = C-/C/C+; 55-65% = D; <55% = F

Incomplete Policy:
Incomplete grades cannot be assigned except in the case of a real emergency. Any grade of incomplete must be approved by the department chair and the dean. In order to receive an incomplete, a student's **course work must have been passing** and the student **must have completed at least half of the coursework for the semester**. Incompletes should be made up within one year of the semester in which the grade of incomplete was assigned. **If an incomplete is not made up prior to the two year grade change deadline established by the University, the "I" will be replaced with a grade calculated for the student based on the work completed and including zeroes for any work not completed.**

Assignments
McGraw Hill's Connect on-line homework and Smart Book programs will be used for graded assignments. **Students see the greatest value from these tools when they register for Connect as soon as possible and complete all assignments in a timely manner.** A link to the course Connect site can be found on Brightspace. Temporary courtesy access is available for students who are not able to purchase an access code right away.

To receive full credit, online homework assignments must be completed by 11:59 pm on the date indicated on the list of assignments in Connect. **Homework assignments can be attempted multiple times, with the attempt that has earned the largest number of points being used in the calculation of the final homework average.** Combinations of assignments can be used if the student emails me to let me know that an assignment has been completed in multiple submissions. Late homework will be accepted at a loss of 2% credit per day. Late points are automatically deducted; requests for extensions are not required.

If you would like to complete a Smart Book activity past the due date, you must send me a request via email. There is no limit to the number of requests for extensions on Smart Book assignments. If you do not request an extension, your grade for the Smart Book assignment will be calculated by the Connect program based on the percentage completed prior to the date and time the assignment is due.

Homework, Smart Book assignments, and Attendance Quizzes will be used to determine the final homework average; for this calculation, homework assignments will be counted as the number of points earned on that assignment and Smart Book assignments will be counted as the number of points equal to the percentage of the assignment that was completed. Quizzes will be 20 points each. The total number of points earned will be divided by the total number of points possible to calculate the homework average. Since homework assignments are often worth more than 100 points, the homework assignments are worth more overall than the Smart Book assignments.

Brightspace will also be used to post various learning tools and any additional assignments.

Academic Integrity
Academic dishonesty is a serious offence, and URI's policy on academic honesty will be strictly enforced. This policy states, in part, that "Students are expected to be honest in all academic work. A

student's name on any written work including assignments, lab reports, internship reports, papers, or examinations, shall be regarded as assurance that the work is the result of the student's own thought and study. Work should be stated in the student's own words and produced without assistance or properly attributed to its source." The entire policy can be found in the student handbook, which is available online (https://web.uri.edu/studentconduct/student-handbook/). Some examples of academic dishonesty contained in that policy include:

- Unauthorized possession or access to exams
- **Unauthorized communication during exams**
- Unauthorized use of another's work or preparing work for another student
- **Taking an exam for another student**
- Altering or attempting to alter grades
- The use of notes or electronic devices such as calculators, computers, or cell phones **to gain an unauthorized advantage during exams**
- **Facilitating or aiding another's academic dishonesty**

ACADEMIC INTEGRITY VIOLATIONS MAY RESULT IN THE STUDENT RECEIVING A FAILING GRADE OR A ZERO FOR AN EXAM, AN ASSIGNMENT, OR FOR THE ENTIRE COURSE.

URI COVID/Viral Illness Precautions Statement:
The University is committed to delivering its educational mission while protecting the health and safety of our community. As members of the URI community, students are required to comply with standards of conduct and take precautions to keep themselves and others safe.
• Masks are required in all classrooms, laboratories, and spaces where direct academic instruction and research are taking place, unless the instructor or staff member expressly waives that requirement.
• We strongly recommend surgical or higher grade masks where face coverings are required. Masks should be properly worn, well-fitting, and high quality.
• Students who do not comply with the classroom/lab masking requirement will be asked to leave class and will be reported through the Student Conduct process.
• Students who are experiencing symptoms of viral illness should NOT go to class/work. Those who test positive for COVID-19 should follow the isolation guidelines from the Rhode Island Department of Health and CDC.

Anti-Bias Statement:
We respect the rights and dignity of each individual and group. We reject prejudice and intolerance, and we work to understand differences. We believe that equity and inclusion are critical components for campus community members to thrive. If you are a target or a witness of a bias incident, you are encouraged to submit a report to the URI Bias Response Team at www.uri.edu/brt. There you will also find people and resources to help.

Final Note on how to achieve success in CHM 101
CHM 101 covers a large amount of material in a relatively short amount of time. It can be a challenging course, but **with sufficient effort success IS possible**! Success in this course requires significant effort from the student. You will be expected to understand many complex processes and to master numerous mathematical skills. It is EXTREMELY important for you to stay on top of your work in this class. Many of the scientific topics that are covered later in the semester build upon those that are learned earlier in the semester – early mastery of those concepts will make it much easier for you to understand later material. Successful CHM 101 students are those who put in the necessary effort starting at the very beginning of the semester. You will want to prepare for and participate in all lectures, and practice what you have learned. Make sure to complete all assignments in a timely manner. Actively work to learn the material throughout the semester. If you find that you are struggling **SEEK HELP RIGHT AWAY**. Use the Starfish Success Net (there is a link in the Brightspace site) to make an appointment to see me – I am happy to go over material that you are struggling with, answer questions about homework problems, etc. You are also welcome to stop by my office without an appointment if I am available. You can also visit the TAs in the Beaupre Learning Center or the tutors in the AEC. The important thing is that you get help **EARLY!**

SCHEDULE*

***Note that changes may be made to this schedule due to weather, pace of the class, or other considerations. If school is closed on an exam day (e.g. snow day), THE EXAM WILL BE HELD ON THE NEXT DAY THAT THE CLASS MEETS. <u>If we have not fully covered all of the chapters listed before an exam, only the topics covered in class will be included in the exam</u>. More detailed information on the contents of each exam will be provided closer to the exam date.**

Chapter	Title	Week/Date
1	Chemistry: The Science of Change	1–4
2	Atoms & the Periodic Table	
3	Quantum Theory & The Electronic Structure of Atoms	
4	Periodic Trends of the Elements	
Exam 1	**Chapters 1–4**	**Tuesday Oct. 4th**
5	Ionic & Covalent Compounds	5–7
6	Representing Molecules	
7	Molecular Geom., Intermolec. Forces, & Bonding	
Exam 2	**Chapters 3–7**	**Tuesday Oct. 25th**
8	Chemical Reactions	8–11
9	Chemical Reactions in Aqueous Solutions	
10	Energy Changes in Chemical Reactions	
Exam 3	**Chapters 8–10**	**Thursday Nov. 17th**
11	Gases	12–14
12	Liquids & Solids	
Exam 4	**Chapters 11–12**	**Tuesday Dec. 13th**
****Final Exam: Tuesday December 20th 11:30am – 1:30pm**		

** Final exam dates are set by the University and are subject to change

Important Fall 2022 Semester Dates:

- Wednesday Sept. 28th – last day to drop courses with no transcript designation of "W"
- Monday Oct. 10th – Columbus/Indigenous People's Day, classes do not meet
- Wednesday Oct. 19th – Last day to drop classes in ecampus (after this date, a form is required that must be signed by your Academic Dean)
- Tuesday Oct. 25th – Freshmen Mid-Term grades due at noon
- Tuesday Nov. 8th – Election Day, classes do not meet
- **Wednesday Nov. 9th – Friday classes meet** to make up for Veterans Day
- Friday Nov. 11th – Veterans Day, classes do not meet
- Thursday Nov. 24th – Sunday Nov. 27th – Thanksgiving Recess
- Tuesday Dec. 13th – last day of classes
- Wednesday Dec. 28th – final grades due in ecampus at noon

Gen Ed Outcome	Gen Ed Rubric Element	Specific Course Outcome
Knowledge: STEM Disciplines	**Identifies** facts, vocabulary, definitions, terms, concepts, people	Students will be able to identify chemical principles relating to: matter; physical and chemical processes; chemical structures; chemical bonds
	Recognizes concepts or tools relevant for application to a task	Students will be able to recognize the theories and models chemists use to explain natural phenomena
	Asks questions or frame hypotheses relevant to the task	Students will be able to frame questions and answer them by distilling and correlating principles and theories they have learned
	Collects information relevant to address the task – e.g. data; literature sources	Students will be able to: use periodic trends to predict properties of substances; predict reaction products and balance chemical reactions; estimate physical properties based on intermolecular forces of attraction; determine energetics involved in chemical and physical processes.
	Analyzes: Applies concepts to address the task	Students will be able to: differentiate between factors that affect chemical processes; integrate various chemical principles to predict reaction outcomes; employ stoichiometry and dimensional analysis for quantitative relationships in chemical changes

Gen Ed Outcome	Gen Ed Rubric Element	Specific Course Outcome
Mathematical, Statistical or Computational (MSC) Strategies	**A.1. Conceptualize: Interpretation and Representation** Finds The Necessary Information	Students will be able to read a word problem, determine what elements are needed and convert the problem into the appropriate mathematical equations needed to generate the correct solution.
	A.2. Conceptualize: Interpretation and Representation Make A Plan For How To Solve The Problem	Students will be able to restate the problem and to clearly list the mathematical steps required to generate a correct solution.
	B.1. Computation: Calculation, Application, Analysis Performs The Calculation Or Analysis.	Students will be able to apply their algebraic skills and use a scientific calculator to correctly solve a multi-step problem. Students will be able to use dimensional analysis to follow the units in a computational problem.
	B.2. Computation: Calculation, Application, Analysis Checks The Answer For Accuracy	Students will review their work for mathematical errors and to apply a reality check to their answers before submitting work. Students will be able to defend their answers to computational problems based on chemical concepts as well as mathematical models.