Course Information and Requirements

Websites:
http://www.unf.edu/~michael.lufaso/chem2046/ (lecture notes for printing, etc.)
http://canvas.unf.edu/ (announcements, homework, course scores, etc.)

Required Materials:
Choose one from the hardcover w/MC (9780134809694), loose leaf, or e-text w/MC (9780135373552).
MasteringChemistry: An online tutorial and homework companion student access kit/modified code for 14e textbook. The access code is valid for 24 months from the date of redemption, so you may not need to repurchase if you have a code from a previous semester and are using the same textbook. Registration and access are done through Canvas, so it must be a “modified” code for use with Canvas.
Calculator: A calculator is required for the examinations. The use communications and programming are prohibited. The calculator should be capable of scientific notation, log, and exponential functions. If a graphing calculator is used, you must clear the memory before receiving the exam. On a typical TI-XX graphing calculator, the sequence is to press 2nd then ‘+’ (MEM), then Reset, All RAM, Reset. A message will be displayed as RAM Cleared. I may randomly ask for calculators and inspect the memory during the exams. Sharing a calculator, even if one student is done with the exam, will result in a score of zero for both students and a report for academic misconduct.
Prerequisite: CHM 2045 and CHM2045L with a grade of C or better.
Laboratory: CHM2046L is separate and does not influence the grade in the lecture, but if you withdraw from the lecture you should withdraw from the laboratory course.

Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Lecture Topic (tentative)</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug 19, 21, 23</td>
<td>intermolecular forces, phase changes, hydrogen bonding</td>
<td>Ch. 11</td>
</tr>
<tr>
<td>2</td>
<td>Aug 26, 28, 30</td>
<td>phase diagrams, solids, unit cells, semiconductors</td>
<td>Ch. 11,12</td>
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<tr>
<td>3</td>
<td>Sep 4, 6</td>
<td>solution processes, concentration, colligative properties</td>
<td>Ch. 12,13</td>
</tr>
<tr>
<td>4</td>
<td>Sep 9, 11, 13</td>
<td>boiling point elevation, osmosis, colloids</td>
<td>Ch. 13,14</td>
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<tr>
<td>5</td>
<td>Sep 16, 18, 20</td>
<td>kinetics, Integrated rate laws, activation energy, catalysts</td>
<td>Ch. 14</td>
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<tr>
<td>6</td>
<td>Sep 23, 25, 27</td>
<td>reaction quotient, calculating equilibrium constant</td>
<td>Ch. 14,15</td>
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<tr>
<td>7</td>
<td>Sep 30, Oct 2, 4</td>
<td>Le Chatelier’s principle, acids and bases, autoionization of water, pH</td>
<td>Ch. 15, 16</td>
</tr>
<tr>
<td>8</td>
<td>Oct 7, 9, 11</td>
<td>$K_a$ and $K_b$, Lewis acid and base, common ion effect, buffers</td>
<td>Ch. 16</td>
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<tr>
<td>9</td>
<td>Oct 14, 16, 18</td>
<td>titrations, solubility equilibria, buffers</td>
<td>Ch. 17</td>
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<tr>
<td>10</td>
<td>Oct 21, 23, 25</td>
<td>solubility equilibria, titrations</td>
<td>Ch. 17</td>
</tr>
<tr>
<td>11</td>
<td>Oct 28, 30, Nov 1</td>
<td>entropy, laws of thermodynamics, Gibbs free energy</td>
<td>Ch. 19</td>
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<tr>
<td>12</td>
<td>Nov 4, 6, 8</td>
<td>Gibbs and K, balancing redox reactions, Voltaic cells</td>
<td>Ch. 19, 20</td>
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<tr>
<td>13</td>
<td>Nov 13, 15</td>
<td>galvanic cells, cell EMFs, Nernst equation, electrolysis, electrolytic cells</td>
<td>Ch. 20</td>
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<tr>
<td>14</td>
<td>Nov 18, 20, 22</td>
<td>free energy, nuclear equations, nuclear stability, nuclear kinetics</td>
<td>Ch. 20, 21</td>
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<tr>
<td>15</td>
<td>Nov 25-29</td>
<td>No classes, Thanksgiving</td>
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<tr>
<td>16</td>
<td>Dec 2, 4, 6</td>
<td>fission, fusion, radiation health and safety</td>
<td>Ch. 21</td>
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<td>E</td>
<td>Dec 11</td>
<td>Final Exam: (cumulative)</td>
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No class meeting because of holidays on September 2 and November 11.

Homework:
Graded homework problems are assigned on MasteringChemistry and accessed through Canvas. Graded homework is to be done individually and contributes towards your overall course grade.
Exams:
Midterm exams (five) are scheduled on September 6, September 25, October 14, November 1, and November 22. The final exam is scheduled on Wednesday, December 11 (7:00-8:50 am). UNF ID cards may be requested at an exam. To ensure fairness, leaving of the exam room is not permitted until the exam is completed and turned in. Bring an approved calculator to all exams. No make-up midterm or final exams will be given. If you miss an exam for reasons beyond your control, it must be documented within three days by official documentation (e.g. police report, emergency room receipt), and you may receive a grade that is the average of your other exams. Absences for other reasons are not excused and result in a score of 0 for the exam.

ParScore forms will be provided with exams. The test form and ID number must be bubbled. The test form is provided before question 1 of the exam. Each of the numerical digits of the UNF n-number are to be used for the I.D. number, which leaves the last column blank. An I.D. number or test form that is incorrectly completed, incompletely bubbled, or misread due to too light of bubbling will receive a 10-point penalty each. The ParScore form is turned in and you take the marked exam pages. Compare with a detailed answer key and solutions to each exam that are posted after the exam on the bulletin board near 50/2712.

Grading and Evaluation:
The final grade is evaluated based on total points earned.

<table>
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<tr>
<th>Assignment</th>
<th>Points</th>
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| Homework         | 200 pts.
| Midterm exam (top score) | 150 pts.
| Midterm exam (second best score) | 150 pts.
| Midterm exam (third best score) | 150 pts.
| Midterm exam (fourth best score) | 150 pts.
| Final Exam       | 200 pts.
| **Total**        | **1000 pts.**

The course will be graded so that A: 90-100%; A-: 88-90%; B+: 85-88%; B: 80-85; B-: 77-80; C+: 75-77%; C: 68-75%; D: 55-68%. There is no rounding up or down. In the rare case of exactly at the boundary between grades, the higher grade will be awarded. For example, an 89.99% is an A- and a 90.00% is an A.

Final Grade:
The lowest midterm score is dropped. The grading scheme listed above contains a prebuilt “curve” from standard percentages. I may adjust it slightly to benefit the student, but this is at my discretion. The only extra credit opportunities are ones that I choose to include with the homework or exams. Your final grade is not negotiable and may not be communicated over e-mail due to FERPA regulations. Explanations of how many hours you spent studying, or how desperately you need a certain grade for a specific reason, or requests for extra credit, rounding up, or additional curving will not improve your grade at the end of the semester. E-mails or phone calls will not receive a response for any inquiries after the final exam and before grades are submitted. At my discretion, an in-person appointment can be scheduled for the week after grades are reported or during office hours in the following semester.

Grading Dispute:
If you wish to dispute a score for an assignment or exam, you must describe the nature of the dispute in writing and meet during office hours no later than two weeks after the due date of the assignment or date of exam. Scores outside of this window will be considered final.

Office hours:
Office hours are held at the times listed in this syllabus. A request to reschedule an office hour may be submitted with proof of a conflict (e.g. copy of course or work schedule with the scheduled times). The request needs to be made one week in advance of the desired meeting time. An office hour in the following week will be moved and a notice placed on a Canvas announcement informing all students in my courses of the new time.
Policy on Academic Integrity:

Exams and homework must represent your own work and follow the UNF Academic Integrity Code. Penalties for misconduct include, but is not limited to, a score of zero for the work or additional penalty of “F” or unforgivable “F” for the course. Copying another student’s work and the use of stored text or formulas in calculators on exams are violations. These will be referred to the appropriate academic dean or Vice President for Student Affairs. You should familiarize yourself with the Academic Misconduct Policy at UNF: https://www.unf.edu/president/policies_regulations/02-AcademicAffairs/EnrollmentServices/2_0640P.aspx

Course Format and Conduct:

Lecture classes begin and end promptly at the scheduled times. All students should be in class on time and remain until the end of class. Avoid disruptive behavior such as using a mobile phones or electronic device that makes noise during class, or laptops for non-lecture topic. There is a 10-point penalty for a phone ringing or vibrating during an exam. As a courtesy to other students, disruptive students may be asked to leave the room.

Continuity of Instruction Plan:

In the event of disruption of normal classroom activities due to an emergency such as hurricane, pandemic or other unforeseen event or combination of events, the format of this course may be modified in order to enable completion of the course requirements. In that event, you will be provided an addendum to this syllabus that will supersede this version. It is your responsibility as a student participant to be proactive during any emergency to find instructions that I will post on Canvas.

Accommodations:

Students with disabilities who seek reasonable accommodations in the classroom or other aspects of performing their coursework must first register with the UNF Disability Resource Center (DRC) located in Building 57, Room 1500. DRC staff members work with students to obtain required documentation of disability and to identify appropriate accommodations as required by applicable disability laws including the Americans with Disabilities Act (ADA). After receiving all necessary documentation, the DRC staff determines whether a student qualifies for services with the DRC and if so, the accommodations the student requires will be provided. DRC staff then prepares a letter for the student to provide faculty advising them of approved accommodations. For further information, contact the DRC by phone (904) 620-2769, email (drc@unf.edu), or visit the DRC website (http://www.unf.edu/drc/). If a student with flexible attendance accommodation through the DRC misses an exam, the make-up exam will be given on a date of my selection. This would typically be more than one week after the original exam date because of the amount of time required to write another exam. Only one exam for the DRC flexible attendance accommodation may be made up.

Military and veteran students may need both physical and academic accommodations and may contact the DRC to find further information. Military and veteran students who return from combat exposure may be utilizing the post 9/11 GI bill to continue postsecondary education goals. Contact Military and Veterans Resource Center by phone (904) 620-2655 or e-mail mvrc@unf.edu.

Student athletes are permitted to make up a missed exam as a result of attending a university sponsored event (such as an away sporting event). Graded homework assignments, typically open for at least one week, should be completed prior to the event and due date.

Student Learning Outcomes:

- Demonstrate understanding of the chemical concepts below by solving both conceptual and quantitative problems.
- Develop analytical thinking, problem solving, and graph/diagram reading skills.
- Apply the chemical concepts below to real-world examples or situations.
- Acquire mastery of core chemical knowledge and skills based in the concepts listed below: fundamental properties of the condensed phases of matter; major types of intermolecular forces and their fundamental properties; fundamentals of solutions, concentration, and solubility; fundamentals of chemical and acid/base equilibria; basic thermodynamics and kinetics of reactions; basic electrochemistry/redox chemistry
Helpful Suggestions:

Chemistry is a cumulative subject in which new material builds upon a series of linked concepts. Practice is critical. Procrastination, following by “all-nighters” often lead to lack of success. Deliberate and consistent effort will likely yield the best results. Plan to spend at least 3 hours outside of class for every 1-hour lecture, some may need more or less time. I desire to have each of you learn chemistry according to your ability and enjoy the course. Your success in this course will largely depend on your effort and motivation!

- **Textbook reading:** It is recommended that reading of the pertinent chapter sections is completed prior to each lecture. Stay about a half a chapter ahead on the readings.
- **Lecture attendance:** Attend each lecture, arrive on time, stay the entire lecture, be courteous, and focus. If you need to leave early, I would appreciate it if you inform me before class, sit near one of the doors at the back of the room, and wait for a natural break to leave so as to minimize disruption to others. The lecture class and textbook are intended to complement each other. You are responsible for material that is covered during the lecture class period. Lectures will utilize PowerPoint slides, writing on the board, and verbal explanations that accompany both. Merely attending and watching lecture is unlikely to lead to success. Even if you think you fully understand the topic, take quality notes during lecture and review them periodically. In studies, handwritten notes have been shown to focus classroom attention and boost learning.
- **Practice:** More practice and study of the problems, concepts, and material will help you on exams - since you will be able to answer questions more rapidly and have time to check your answers and calculations. To be highly successful in General Chemistry I, you should also do the exam review and as needed additional problems at the end of each chapter.
- **Independent understanding:** Make sure you understand the material and can do the problems independently. If you used study group, learn from each other, but remember that you will not be taking exams as a group.
- **Student Academic Success Services (SASS):** Supplemental instruction (SI), tutoring, academic coaching, and a peer-assisted student success program are offered. For more information visit http://www.unf.edu/ugstudies/SASS/.
- **Homework:** The homework consists of tutorials and problems designed to help you understand the complex concepts of chemistry. Avoid looking up the answers online or copying from others, since this will not help you on exams. Work the problems on paper and show all steps, units, etc., and if you did not answer correctly, bring it to a tutor or office hours. Using that approach, it is easier to improve the understanding about a topic.
- **Office hours:** The purpose of office hours is to provide a time that students can meet with the professor and individually and discuss a topic. Any documentation that needs a signature must be presented during office hours. Students who feel they are not achieving their highest level of success in this course are also encouraged to seek help during office hours. Bring the notes that you take during lecture, as it will be helpful to refer to them when I help you understand the topic.
- **Post-exam:** Write your work on the exam pages. After turning in the ParScore, take your exam with you. When the detailed answer key is posted, generally the next day, examine each question that you missed on the exam and compare with the answer on the posted key. Review the topic, since it may be on the final exam.