Chem 1212 – TR 8:00 a.m. & 9:30 a.m. Spring 2020

Instructor: Dr. Aimée Tomlinson

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Office Hours: TR 10:50 – 12:00 p.m., and by appt

Prerequisites: A passing grade in 1211 lecture and lab.

Corequisites: 1212 lab must be taken at the same time as this lecture unless you can prove you have already successfully completed this class.

Course Objective: This course is the second semester of a two-semester general chemistry sequence. It is intended for students who plan on majoring in the sciences. We will examine gases, liquids, solids, properties of solutions, kinetics, chemical equilibrium, acids, bases, buffers, titrations, solubility, thermodynamics, and electrochemistry.

Required Text: *Chemistry: The Central Science* by Brown et al; Pearson, 2014
(ISBN-13: 978-0321910417)

Web Sites: http://www.masteringchemistry.com – Tomlinson800S20 (8:00 a.m.) & Tomlinson930S20 (9:30 a.m.)
http://faculty.ung.edu/altomlinson/
http://www.facebook.com

Also Required: Calculator with exponential and logarithmic functions (if it is programmable I will make you erase the memory prior to a test), a functioning writing tool, paper, *a cell phone equipped with wifi* and enough caffeine to make sure you stay awake.

Learning Objectives: Upon completion of this course, students should be able to:

1. Understand the difference between intra- and intermolecular forces
2. Comprehend how intermolecular forces work and be able to apply them
3. Be able to use phase diagrams
4. Know how to classify solids and main structure types they can possess
5. Understand solutions and solubility
6. Comprehend colligative properties
7. Be able to use and apply the van't Hoff factor
8. Understand chemical kinetics (rate laws, reaction mechanisms, etc.)
9. Comprehend chemical equilibrium (types of equilibrium constants, Le Châtelier's Prinicple, etc.)
10. Be able to apply knowledge for acid-base equilibria (K_a, K_b, K_w, buffers, titrations, etc.)
11. Understand solubility and the application of solubility product
12. Comprehend chemical thermodynamics (laws, entropy, Gibbs, etc.)
13. Be able to balance redox equations and their application to voltaic cells
14. Understand cell potentials and be able to apply knowledge

Kahoot!
You will need to make up a nickname (ex: LilBit) that you will need to tell me. We will periodically use this online game based learning platform to test both you individually as well as the class as whole.

Class Participation:
You will be given a grade for class attendance, participation (asking and responding to questions as well as Kahoot! Involvement), completing homeworks and corresponding follow-ups, survey completion and office meetings.

Homework Assignments:
You will be given a problem set(s) from each chapter which must be completed on the Mastering Chemistry website. These exercises were chosen to prepare you for quizzes and exams.

Quizzes:
You will be given quizzes which will be a problem taken from your homework.

Exams:
Four exams will be given over the course of the semester. Makeup exams are given only by previous consent. The final will be comprehensive over both semesters and will be the ACS general chemistry exam.

Extra Credit: There is none so don't ask.

Course Evaluation: Final course grades will computed/evaluated as per the allocations below.

Class Participation	8%
Quizzes	12%
Four Exams (15% each)	60%
Final Exam	20%

I will be giving final grades based on a straight 90, 80, 70, 60 percentage. As such you must obtain a score of at least 60% in order to pass this course.

Schedule: Some material may be either deleted or supplemented from the chapters below.

I. *Chapters 11, 12, 13* — Gases and gas laws, intermolecular forces, solid structures, vapor pressure, phase diagrams, solution chemistry, boiling and freezing points, osmotic pressure and colligative properties

Exam #1 (Thursday, February 6th)

II. *Chapters 14, 15* — Chemical kinetics, rate laws, reaction mechanisms, catalysis, chemical equilibrium, homogeneous and heterogeneous equlibria, and Le Châtelier's Principle

Exam #2 (Thursday, March 5th)

III. *Chapters 16, 17* — Acids, bases, pH, salts, common ion effect, buffers, titrations, indicators, precipitation, and equilibria involving complex ions

Exam #3 (Thursday, April 9th)

IV. *Chapters 19, 20* — Spontaneity, entropy, thermodynamic laws, free energy, redox reactions, galvanic and voltaic cells, batteries and electrolysis

Exam #4 (Tuesday, April 28th)

V. **Final Exam** (**Tuesday May 5th** for 8:00 a.m. class & **Thursday May 7th** for 9:30 a.m. class from 8:00 – 9:50 a.m. for both)

Class Evaluations:
Class evaluations at UNG are conducted on-line through Banner. Evaluation of the class is considered a component of the course and students will not be permitted to access their course grade until the evaluation has been completed.

Disabilities and Accommodations:

The University of North Georgia is committed to equal access to its programs, services, and activities, and welcomes otherwise qualified students with disabilities. Students who require accommodations and services must register with Disability Services and submit the supporting documentation. Disability Services provides accommodation memos for eligible students to give to their instructors. It is the student's responsibility to initiate making arrangements with the instructor for any necessary accommodations, and reasonable prior notice of the need must be given to the instructor.

Disability Services contact for Dahlonega campus:
Thomas McCoy, Director of Student Disabilities Services
Stewart Student Success Center, Room 313, (706 867-2782)

Other Accommodations:
Should you need to miss class or change an assignment due date you must provide me with **ADVANCE** notice of the religious holiday or practice and complete the assignment if at all possible prior to the original due date. Should you become ill and be unable to attend class then you must present a doctor's note in order for both the absence to be excused and you be allowed to complete the missed work (i.e. quiz or test).

Academic Integrity Code:
University of North Georgia is dedicated to providing an educational climate characterized by integrity. Academic integrity, in particular,must be the cornerstone of an institution of higher learning and must pervade all segments of the University community. Furthermore, academic integrity is the mutual responsibility of the various constituencies (students, faculty, staff, and administration) which comprise the University.
Academic Integrity Defined
The following regulations define the concept of academic integrity and should be useful in determining standards and attitudes appropriate for optimal intellectual functioning.
1. No student shall receive or give assistance not authorized by the instructor in the preparation of any essay, laboratory report, examination, or other assignment included in an academic course.
2. No student shall take or attempt to take, or otherwise procure in an unauthorized manner, any material pertaining to the conduct of a class, including but not limited to tests, examinations, laboratory equipment, and roll book.
3. No student shall sell, give, lend, or otherwise furnish to any unauthorized person material which can be shown to contain the questions or answers to any examinations scheduled to be given at any subsequent date in any course of study offered by the university, without authorization from the instructor.
4. No student shall plagiarize. Themes, essays, term papers, tests, and other similar requirements must be the work of the student submitting them. When direct quotations are used, they must be so indicated and when ideas of another are incorporated in the paper, they must be appropriately acknowledged.
5. No student shall resubmit her/his graded material from other courses or from previous assignments for a current assignment without permission of the instructor.
6. No student shall sign class rolls for another student.
Integrity Code
The integrity code, on my honor, "I will not lie, cheat, steal, plagiarize, evade the truth or tolerate those that do," symbolizes UNG's commitment to academic integrity.

Ways to reach me:
- email
- by phone (if I am in the office)
- facebook
- during my office hours

My Website will include:
- lecture notes
- in class exercise, Kahoot, and whiteboard example solutions
- test solutions
- important dates