Chemistry Fundamentals I Syllabus Fall 2015

Course Number: CHM 2045C (4 credit hours)  Time: MWF 9:30-10:20 a.m.

Instructor: Dr. Emily Heider  Location: CB1 121

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Office Hours: Mon, Weds 10:30-11:30, Tues 3:30-4:30 in Chemistry building RM 227

Required Text:
In UCF bookstore: Chemistry: A Molecular Approach 3rd edition by Nivaldo Tro
AND
Coursepack for Chem 2045C by Emily Heider. 2012. Available only at UCF bookstore.
AND
A scientific calculator is also required for this course. Any scientific calculator that has logarithm, scientific notation and exponent capability will be suitable.

Course Objectives
This is general chemistry course intended for students majoring in the sciences who already have a background in chemistry. The following outline shows a list of topics that will be covered. It is the first part of a two semester series and is equivalent to a total of 4 credit hours. It is assumed that you are conversant with the principles of algebra and general mathematics. It is our intention to introduce a broad range of chemistry topics in this course. This class is a prerequisite to a laboratory course (CHM 2046L) that can be taken any time after successful completion of Chem 2045C.

Course Outline
The course will be divided up into a series of ten chapters:
Chapter 1: Matter, Measurement, Problem Solving
Chapter 2: Atoms and Elements
Chapter 3: Molecules, Compounds, Chemical Equations
Chapter 4: Chemical Quantities and Aqueous Reactions
Chapter 6: Thermochemistry
Chapter 7: The Quantum Mechanical Model of the Atom
Chapter 8: Periodic Properties of the Elements
Chapter 9: Chemical Bonding: Lewis Theory
Chapter 10: Molecular Geometry and Bonding
Chapter 5: Gases

Course Goals – ENGAGED Learning
It is possible to pass this course by simply memorizing all content. However, this will be a very boring course if you do. Two of the most important skills in science are: A) problem solving, and B) learning to collaborate with others and present your findings. The time spent in class will certainly convey the chemistry concepts that you must learn, but a portion of class time will be spent on group work that will ideally allow you to learn to solve problems, collaborate with your fellow students, and present your results.
**Coursepack**
The Chem 2045 Coursepack is required for this section of Chem 2045. It is available for purchase at the UCF bookstore. The Coursepack consists of worksheets that will largely be completed DURING lectures and it is therefore essential to bring the Coursepack with you to each lecture period. Worksheets will not be turned in for grading.

**Quizzes**
Closed note quizzes will be given in the discussion sections, with due notice. These will be given for a 30 minute period during the discussion section and it is therefore essential that you are present. **There will be NO make-up quizzes for late or absent students, although the lowest TWO quiz scores will be dropped.**

Quizzes and exams must be completed independently and no help from others or notes is permitted. Bring a raspberry scantron, pencil and a calculator to all quizzes.

Quizzes will be administered on the following schedule:
- Quiz 1 (Tues 9/1 or Thurs 9/3), Quiz 2 (Tues 9/15 or Thurs 9/17), Quiz 3 (Tues 10/6 or Thurs 10/8), Quiz 4 (Tues 10/20 or Thurs 10/22), Quiz 5 (Tues 11/10 or Thurs 11/12), Quiz 6 (Tues 11/17 or Thurs 11/19).

**Minilabs**
An unfortunate limitation of this course is the absence of an accompanying laboratory in which to apply chemical concepts that you learn in lecture and practice in your homework. To mitigate this disadvantage, seven small minilabs are provided for you to complete during the discussion sections in which no quiz is administered. The minilabs are completely “green” and pose no environmental or health hazards. Since you will be collecting real data, you must attend your assigned discussion section to complete the minilab. **There will be NO make-up minilabs for late or absent students, although the lowest TWO minilab scores will be dropped.**

Minilabs will be completed on the following schedule:
- Minilab 1 (Tues 9/8 or Thurs 9/10), Minilab 2 (Tues 9/22 or Thurs 9/24), Minilab 3 (Tues 9/29 or Thurs 10/1), Minilab 4 (10/13 or 10/15), Minilab 5 (Tues 10/27 or Thurs 10/29), Minilab 6 (Tues 11/3 or Thurs 11/5), Minilab 7 (Tues 12/1 or Thurs 12/3).

**Assignments**
Homework is assigned but will not be turned in or graded. Chemistry is a difficult subject, one learned only through working problems. You are expected to work ALL assigned homework problems. Those wishing to do better should do more problems from the book. Homework problems in the book are largely essay or math type problems. Many of the questions for exams and quizzes will look EXACTLY like problems from the homework. **You are encouraged to work together to solve homework problems.**

**Homework Problems:**
- Chapter 1: 33, 37, 39,41, 43, 47, 49, 53, 55, 59, 66, 68, 69, 71, 73, 75, 77, 79, 82, 85, 87, 91, 92, 94, 97, 98, 101, 114, 138
- Chapter 3: 2, 5, 8, 23, 27, 29, 31, 33, 35, 37, 41, 43, 47, 49, 51, 53, 59, 63, 65, 67, 69, 73, 74, 79, 81, 87, 93, 100, 105, 109, 128
- Chapter 4: 4, 6, 9, 12, 15, 22, 25, 27, 31, 35, 37, 41, 43, 47, 49, 53, 59, 61, 63, 65, 71, 73 75, 79, 83, 85, 87, 89, 91, 93, 95, 97, 105
Chapter 6: 5, 6, 10, 13, 19, 21, 25, 27, 33, 39, 41, 47, 49, 51, 53, 55, 57, 59, 65, 67, 73, 75, 77, 81, 83, 87, 91, 93, 103, 137
Chapter 7: 3, 4, 5, 6, 7, 13, 16, 27, 28, 29, 32, 37, 39, 41, 43, 45, 47, 51, 53, 57, 59, 61, 65, 66, 69, 71, 73, 79, 106
Chapter 8: 4, 8, 14, 16, 17, 29, 30, 32, 33, 34, 41, 43, 45, 46, 51, 53, 59, 63, 65, 67, 69, 71, 73, 75, 79, 83, 85, 87, 89, 93, 101
Chapter 9: 4, 10, 15, 19, 35, 37, 39, 41, 45, 49, 51, 53, 54, 55, 57, 59, 61, 63, 65, 66, 73, 75, 77, 79, 81, 87, 96, 101, 126
Chapter 5: 6, 11, 13, 19, 21, 23, 24, 25, 27, 29, 31, 33, 35, 37, 41, 45, 49, 51, 55, 57, 61, 63, 65, 71, 73, 81, 83, 85, 89, 90, 91, 92, 120, 123

**Exam Policy**
Exams will be given on the following schedule (although inclusive chapters are approximate):
- In class Wednesday, 9/23 Exam 1 (Chapter 1, 2, 3)
- In class Wednesday 10/28 Exam 2 (Chapter 4, 6, 7)
- In class Monday 11/30 Exam 3 (Chapter 8, 9, 10)
- Friday, December 11th 7:00 a.m. Final Comprehensive Exam (Chapters 1-10)

All midterm exams will be worth a total of 100 points each, and will be multiple choice problems that require calculations or conceptual understanding of content. You will be required to bring a #2 pencil and “raspberry” shaded scantron to each exam. The tests are not graded on a curve. If you miss an exam for any reason, you forfeit the points; however the lowest exam score (or half of the final score) will be dropped.

**Grading Policy**
The grade a student receives for this course is based upon their mastery of the subject material and not the effort that they put into the course. The grades will be assigned according to percent of the number of points earned as follows:

- **Discussion Quizzes:** 80 points (only highest four quiz scores included)
- **Minilab Scores:** 50 points (only highest five minilabs included)
- **Midterm Exams:** 200 or 300 points (the lowest exam score will be dropped)
- **Final Exam** 200 or 100 points (if the final is the lowest score, then half will be dropped)

**Total:** 530 points

The percent of the total points that you earn will be used to determine your grade:

- A 90.00 - 100%
- B 80.00 – 89.99%
- C 67.00-79.99%
- NC 50.00-66.99%
- Fail <50%

**Attendance**
Attendance in class will not be recorded. However, you must be present to take the quizzes or acquire minilab data in discussion sections, or take the exams in class.
**Webcourses**
Lecture content will be available for your use on Webcourses. Announcements about exams, quizzes, and scoring will also be found on Webcourses. You are highly encouraged to make use of this resource. Go to www.ufc.edu and select the myUCF option in top right corner to login.

**Financial Aid Requirement**
As of Fall 2014, all faculty are required to document students’ academic activity at the beginning of each course. In order to document that you began this course, please complete the Financial Aid quiz on Webcourses by the end of the first week of classes or as soon as possible after adding the course, but no later than August 28th. Failure to do so may result in a delay in the disbursement of your financial aid.

**Academic Integrity and Dishonesty**
Each student is expected to maintain academic ethics and honesty in all its forms, including, but not limited to, cheating as defined:

Cheating is the act of using or attempting to use, or providing others with, unauthorized information, materials or study aids in academic work. Cheating includes distributing examination answers & questions to, or taking examinations for, someone else, or preparing or copying another’s academic work.

You are expected to write all quizzes and examinations without using study aids, lists of equations (commit them to memory), or group participation. If you become aware of quiz or exam material being circulated before or while it is being administered, you are expected to make the instructor aware of it.

**Disability Accommodations**
The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. Students with disabilities who need accommodations in this course must contact Student Accessibility Services and then the professor at the beginning of the semester to discuss needed accommodations. No accommodations will be provided until the student has met with the professor to request accommodations. Students who need accommodations must be registered with Student Accessibility Services, Ferrell Commons RM 132, email sds@mail.ucf.edu, phone (407) 823-2371 before meeting with the professor.

**Important Dates**
Classes begin Monday August 24th
Drop Swap Deadline Thursday August 27th
Last day to withdraw Monday November 2nd
Labor Day Monday September 7th
Veteran’s Day Wednesday November 11th
Thanksgiving Thursday-Friday November 26-27th
Classes close 12 p.m. on Thursday September 3rd for UCF v. Florida International University
Classes close 3 p.m. on Thursday November 19th UCF v. East Carolina
Last Day of Lecture Monday December 7th

The information in this syllabus may be changed at the instructor's discretion.