University of North Texas at Dallas

SPRING 2015 SYLLABUS

CHEM 1420D: General Chemistry for Science Majors, 3Hrs

Department of	Life & Health Sciences	Division of	Liberal Arts and Life Sciences

Instructor Name:	Dr. Sudha Chellamma
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Office Hours:	**Monday: 2-5 pm** **and by appointment**

Classroom Location:	**Lecture: Founder's Hall 240** **Recitation: Founder's Hall 240**
Class Meeting Days & Times:	**Lecture: T R 4-5:20 PM** **Recitation: R 5:30 – 6:20 PM**

Course Catalog Description:	**Thermodynamics, reaction rates, equilibrium, electrochemistry, organic chemistry, polymers, radioactivity and nuclear reactions.**

Prerequisites:	**CHEM1410**
Co-requisites:	**General Chemistry Lab II, CHEM1440D, should be taken concurrently.**
Required Text:	**Moore, Stanitski, and Jurs: *Principles of Chemistry: The Molecular Science,* Brooks/Cole**

Access to Learning Resources:	UNT Dallas Library: phone: (972) 780-3625; web: http://www.unt.edu/unt-dallas/library.htm UNT Dallas Bookstore: phone: (972) 780-3652; e-mail: 1012mgr@fheg.follett.com

Course Objectives:

UNT'S Core Curriculum Student Learning Outcomes

As a result of their experience with the core curriculum, UNT Dallas graduates will:

- explore English, the arts and humanities, math, the natural sciences, and social and behavioral sciences.
- be able to locate, evaluate and organize information including the use of information technologies.
- think critically and creatively, learning to apply different systems of analysis.
- develop problem solving skills that incorporate multiple viewpoints and differing contexts in their analysis.
- cultivate intellectual curiosity and self-responsibility, building a foundation for life-long learning.
- engage with a variety of others in thoughtful and well crafted communication.

	• broaden and refine their thinking as a part of the give and take of ideas, seeking to better understand other's perspectives as well as their own. These learning outcomes will be assessed through specific assignments and exam questions given during the semester. These include: • **A special topics paper on a current issue related to chemistry** • **A presentation based on the paper above; audience participation will also be evaluated** • **Exam questions on chemical equilibria** • **Determination of identities of unknown carboxylic acids by titrimetric determination of pKa values** **CHEM 1420 Learning Objectives/Outcomes:** At the end of this course, the student will:
1	Be able to determine rate laws and rate constants of reaction given kinetic data.
2	Be able to set up and solve equilibrium expressions for chemical equations and calculate values for equilibrium constants.
3	Be able to calculate equilibrium quantities of reactants and products given the equilibrium constant and initial quantities.
4	Demonstrate knowledge of different concentration expressions (molarity, molality, mole fraction, mole percent, ppm, weight percent), and the ability to convert from one expression to another.
5	Be familiar with the relationship between entropy, enthalpy and the spontaneity of chemical reactions
6	Be able to apply appropriate concentration values to changes in colligative properties (vapor pressure lowering, boiling point elevation, freezing point depression, osmotic pressure).
7	Be able to balance redox equations under acidic or basic conditions.
8	Be able to use standard potential values to determine the voltage of an electrochemical cell under standard and non-standard conditions.
9	Be able to use potential values to determine the equilibrium constant of a redox reaction.
10	Demonstrate basic knowledge of nuclear reactions including alpha decay, beta decay, positron emission, and electron capture and be able to balance nuclear reactions.

Course Outline

This schedule is subject to change by the instructor. Any changes to this schedule will be communicated in class or by BlackBoard. If you are absent, it is your responsibility to contact the instructor or classmates.

TOPICS	***Week of***
Chapter 12: Chemical Kinetics: Rates of Reaction	*1/18/15, 1/25/15*
Chapter 13: Chemical Equilibria	*2/1/15, 2/8/15*
Chapter 14: The Chemistry of Solutes and Solutions	*2/8/15*
Exam 1: Chapters 12-14	*2/15/15*
Chapter 15: Acids and Bases	*2/22/15, 3/1/15*
Chapter 16: Additional Aqueous Equilibria	*3/1/15,3/8/15*
Spring Break	*3/15/15*
Exam 2: Chapters 15-16	*3/22/15*

Chapter 17: Chemical Thermodynamics	*3/29/15, 4/5/15*
Chapter 18: Electrochemistry and its Applications	*4/12/15, 4/19/15*
Chapter 19: Nuclear Chemistry	*4/19/15*
Exam 3: Chapters 17-19	*4/26/15*
Presentations/Final Review	*5/3/15*
Final Cumulative Exam	*5/10/15*

Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

Attendance – *attendance will be taken **at the beginning** of each class.*
Quiz – *Quizzes will be posted on BB on a weekly basis and it is the student's responsibility to submit those by the due dates.*

Special Topics Essay – *A term paper designed to give students the opportunity to independently research a specific issue in chemistry topics exploring any relevant ethical dilemmas and potential benefits or harm to society or individuals. Students will be evaluated on spelling and grammar, organization of information, quality of references (including proper use of citations), and depth and quality of content. A grading rubric will be provided. –* ***Paper topic and one paragraph proposal due 2/26; Final Paper is due by 4/2.***

Presentation – *a 5-10 minute in-class presentation based on the special topics essay. Grading will be based on content, delivery, ability to answer questions, and participation during other presentations. A grading rubric will be provided.* ***Presentations will take place during the last week of class and dates will be assigned in the class.***

Exams – written tests designed to measure knowledge of presented course material. While midterm exams will focus on material discussed since the previous exam, the final exam will be cumulative.

Grading Matrix:

Instrument	Comments	Total
Attendance/Participation	Taken daily at beginning of class and recitation	5%
Quiz	6-10 (lowest will be dropped)	10%
Special Topics Essay	Grading rubric on Blackboard	10%
Presentation	Grading rubric on Blackboard	5%
Midterm Exams	3 exams at 15% each	45%
Final Exam	1 exam at 25%	25%
Total:		**100%**

Final grade percentages will be rounded to the nearest whole number and letter grades assigned as below
A = 90% or better
B = 80 – 89 %
C = 70 – 79 %
D = 60 – 69 %
F = <60%

General Chemistry II Labs – You should enroll in both General Chemistry lecture (CHEM1420D) and General Chemistry Labs (CHEM1440D). It is strongly suggested that you enroll in them concurrently. However, CHEM1420D and CHEM1440D are separate courses. Students receive separate grades for the lecture and lab courses. Dropping either course does NOT automatically drop you from the other course if you enrolled in both.

University Policies and Procedures

Students with Disabilities (ADA Compliance):
The University of North Texas Dallas faculty is committed to complying with the Americans with Disabilities Act (ADA). Students' with documented disabilities are responsible for informing faculty of their needs for reasonable accommodations and providing written authorized documentation. Grades assigned before an accommodation is provided will not be changed as accommodations are not retroactive. For more information, you may visit the Student Life Office, Suite 200, Founder's Hall.

Student Evaluation of Teaching Effectiveness Policy:
The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SETE to be an important part of your participation in this class.

Assignment Policy:
***Research Papers** must be word-processed with all **references** clearly provided using **APA style**. Essays will be posted and turned in as an attachment via Blackboard (see Assignments tab). A **rubric for grading** will also be posted on **Blackboard**, with grading based on spelling and grammar, organization of information, quality of references, and depth and quality of content.*

***PowerPoint Presentations** based on your essay will take place during the last couple of classes. A sign-up sheet will determine the date of each student's presentation.*

Exam Policy:
Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook).

Classroom Policies:

- Students are required to check eCampus on a regular basis for any announcements.
- Students are responsible to come to exams with all necessary materials for examination. All exams will be multiple choice and may include a free response section.
- Grades will not be provided over the phone or by e-mail.
- No work or lab report will be accepted by e-mail.
- No make up exams will be given without prior approval. There is no make up for Final exam.
- No late work will be accepted without prior written approval.
- Cell phones and/or pagers need to be turned off during the class period. No texting is allowed during the class period.
- No electronic devices other than calculators may be turned on during the class. If you need a calculator, **you will not be allowed to use your phone for this purpose.**
- Tobacco products of any kind are not permitted in the classroom.
- Food is not permitted in the classroom although drinks are allowed if in a closed lid container.

Academic Integrity:
Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the Student Code of Academic Integrity at http://www.unt.edu/untdallas/policies/Chapter%2007%20Student%20Affairs,%20Education,%20and%20Funding/7.002%20Code%20of% 20Academic_Integrity.pdf for complete provisions of this code.

In addition, all academic work submitted for this class, including exams, papers, and written assignments should include the following statement:
On my honor, I have not given, nor received, nor witnessed any unauthorized assistance that violates the UNTD Academic Integrity Policy.

Bad Weather Policy:
On those days that present severe weather and driving conditions, a decision may be made to close the campus. In case of inclement weather, call UNT Dallas Campuses main voicemail number (972) 780-3600 or search postings on the campus website www.unt.edu/dallas. Students are encouraged to update their Eagle Alert contact information, so they will receive this information automatically.

Attendance and Participation Policy:
The University attendance policy is in effect for this course. Class attendance and participation is expected because the class is designed as a shared learning experience and because essential information not in the textbook will be discussed in class. The dynamic and intensive nature of this course makes it impossible for students to make-up or to receive credit for missed classes. Attendance and participation in all class meetings is essential to the integration of course material and your ability to demonstrate proficiency. Students are responsible to notify the instructor if they are missing class and for what reason. Students are also responsible to make up any work covered in class. It is recommended that each student coordinate with a student colleague to obtain a copy of the class notes, if they are absent. Attendance will be taken at the beginning of each class. See the "Course Evaluation Methods" for more details on attendance grades.

Diversity/Tolerance Policy:
Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of particular nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Office of Student Life as the instructor deems appropriate.

Communication

I will use Blackboard to post power points, homework assignments, answer keys and supplemental information. I will also email the class occasionally, so please check your university email and blackboard regularly. Make sure to communicate using university email and I will respond within 24 hrs on weekdays and by the next business day on weekends.

Grade of "Incomplete"
If a student is unable to complete the course due to extenuating circumstances, a grade an incomplete grade "I" may be assigned: The student must have attended class regular up to April 7th with a passing grade and arrangements must be made with me before the end of the semester. Also note the University will automatically change a grade of "I" to an "F" at the end of the next term, so the missed work must be made up before that time.

Instructor reserves the right to amend this Syllabus as necessary.