Semester and Year: Summer 2017  
Section: 86002

Class time and days:
Lecture: MTWR 09:40AM - 11:40AM  
Room: WH 145

Lab: MTWR 11:50AM - 01:50PM  
Room: SH 246

Instructor: Neelam Jaggi

Contact Info: njaggi@dccc.edu  
PH # 972-238-6140

Office: ACCESS Office, A-110

Semester and Year: Summer 2017

Last date to withdraw: (With a grade of W) - Aug 3rd, 2017

Final Exam Day, Date and time: R, Aug 10th, 09:40AM to 11:40AM at WH 145

COURSE DESCRIPTION
This course is for science and science-related majors. It is a continuation of Chemistry 1411. Topics include states of matter, phase diagrams and intermolecular interactions; reaction kinetics, chemical equilibrium, modern acid-base theory, buffers, chemical thermodynamics, colligative properties of solutions, electrochemistry and nuclear chemistry. Topics may further include transition-metal chemistry, an introduction to organic chemistry and qualitative inorganic analysis. (3 Lec., 3 Lab.)

Required Materials:
Splash-proof safety goggles and a scientific calculator (any).

COURSE OBJECTIVES
A student completing Chemistry 1412 should understand:

- The nature of acids and bases, both "weak" and "strong".
- The concept of "equilibrium" and the algebraic manipulations necessary to express equilibrium situations of acids and bases, slightly soluble salts, complex ions, and redox reactions.
- Colligative properties and their mathematical expression.
- Thermodynamic quantities such as enthalpy, entropy, and free energy and their relationship to chemical and physical changes.
- Factors affecting the rates at which chemical reactions proceed and their mathematical expression, leading to the concept of "mechanism" of a chemical reaction.
- Basic concepts of electrochemistry whereby electrical energy is produced from chemical reactions.
- Basic concepts of nuclear chemistry (radioactivity) including nuclear decay and energy production and the uses of radioisotopes.
- Upon completion of the laboratory component, the student will have developed systematic laboratory work technique and a familiarity with laboratory instruments, apparatus, and procedures beyond Chemistry 1411 in qualitative and quantitative investigations. The student will be able to write reports neatly, clearly, and concisely.
Evaluation Procedures: Your final course grade will be determined by the total number of points accumulated from all assignments. Total possible points = 1000. No adjustment will be made at the end of the semester. Your percentage grade will be rounded to two significant figures and that is the grade you will have earned.

A = 88. %
B = 78. %
C = 68. %
D = 58. %
F = below 58. %

Points may be obtained from the following:

- 4 exams @ 100 = 400 (40%)
- 1 final exam @ 200 = 200 (20%)
- 12 labs @ 20 (drop 1) = 220 (25%)
- Homework = 100 (10%)
- Quizzes = 40 (4 %)
- Challenge Questions = 50 (3%)
- Total 102%

Final Grades are based on WEIGHTAGE NOT the RUNNING TOTAL

Exams: 60-80% of the exam questions are carefully chosen from a multiple-choice question test bank. No partial credit will be given for multiple-choice questions. 20-40% of the exam questions are short answer or fill-in-the-blank or problems which require that you show your work. There are usually 25 questions on each exam, worth 4 points each. Except for very unusual circumstances, you will not be allowed to make up a missed exam after the class has met again. If you are providentially hindered from reaching an exam (flat tire, wreck, emergency appendectomy) please call or email me immediately. We must make arrangements for you to take the exam before the next class or lab meeting. I may ask to see some documentation of the emergency (doctor’s note, receipt for tow truck, etc.). If you totally miss a major exam, then the score on the Final Exam will take the place of that zero. If you score higher on the Final Exam than your lowest major exam, then your lowest exam score will be dropped and the score on the Final Exam will be substituted for the dropped exam.

Class Participation: During lecture I will ask you to work with a partner and solve a problem or answer a question on the screen pertinent to that day’s lecture topic. These results will tell me if everyone understands, or if I need to spend additional time on the topic. For each class in which you participate, you will get 1 bonus point on the next exam. Turn off your cell phone when you enter class and do not turn it on till the time you are in the class room. Please arrive on time and remain in the class room for the entire class period.

Lab: Although you will work with an assigned partner or small group in lab, each student turns in a complete individual lab report. The written pre-lab from your lab manual must be completed before lab time and is usually worth 4-6 of the 20 points possible for each lab report. If the pre-lab assignment asks for a "checklist", you must write out directions for the lab experiment that are sufficient in detail for me to do the experiment without the lab book. Complete sentences are not necessary; you may use an outline or pictures or lists, etc. You must buy safety goggles and bring them to the lab each week, or leave them in the drawer assigned to your lab section.

If you are absent from a lab you cannot receive any points for that lab. There is one "extra" lab on the schedule, so missing one lab will not affect your possible total points. If you have no lab absences, you may count the last lab as extra credit. You may make up a missed lab by attending another 1412 lab section doing that same lab experiment. Consult the class schedule online to find the available times. That lab instructor will initial and date your pre-lab and lab papers and turn in those papers to your assigned lab instructor by leaving them in the
appropriate box in the lab prep area. **Do not abuse this privilege. Go to your assigned lab section if at all possible. You will be asked to document the reason for your absence.**

Also you will have Challenge Questions (2%) either at the end of the lecture or in the beginning of next Lecture.

**Attendance Policy:** Activities in class can lead to bonus points on the exam, so it is to the student's advantage to come to class. Students must turn off cell phones during class.

**Units of Instruction/Class Calendar:** See calendar posted on e Campus. Instructor reserves the right to alter this schedule as needed.

**Instructor Policies and Suggestions for Student Success:**

**How to Succeed in this Course:**

1. **Study:** Plan to study two hours outside class for each hour in class, or about 8 hours per week. Your study time should be at a regular planned time and spread throughout the week, not all day Sunday.

2. **Read:** Read the sections from the text that will be covered in the lecture before you come to lecture so you will be familiar with the vocabulary and know the areas that may be difficult for you. Jot down your questions as you read. If your questions are not answered during lecture, then speak up in class or see me during an office hour or ask me during lab for clarification. You will also find knowledgeable tutors in the Science Corner across from SH 278. Consult the posted schedule for times when chemistry tutors are available.

**Homework:** (You need to register in this course by using your access code that comes with your new book or you can buy online).

[https://www.pearsonmylabandmastering.com/northamerica/masteringchemistry/](https://www.pearsonmylabandmastering.com/northamerica/masteringchemistry/)

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**Keep up with the lab work:** Prepare for lab by reading the procedure in advance, reading the lab notes, and completing the pre-lab assignment in your manual before you come to lab.

**ACADEMIC HONESTY**

Scholastic dishonesty is a violation of the Code of Student Conduct. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.

As a college student, you are considered a responsible adult. Your enrollment indicates acceptance of the DCCCD Code of Student Conduct published in the DCCCD Catalog at [https://www1.dcccd.edu/catalog/ss/code.cfm](https://www1.dcccd.edu/catalog/ss/code.cfm)

**ADA STATEMENT** If you are a student with a disability and/or special needs who requires accommodations, please contact the college Disability Services Office at 972-238-6180 (Voice/TTY), visit Thunder duck Hall, suite T120.

**CAMPUS EMERGENCY OPERATION PLAN**

Richland College and the Dallas County Community College District have developed policies and procedures for dealing with emergencies that may occur on campus. To familiarize yourself with these procedures, please take time to watch the overview video: [http://video.dcccd.edu/rtv/DO/emergency_dcccd.wmv](http://video.dcccd.edu/rtv/DO/emergency_dcccd.wmv). The complete Emergency Operations Plan can be viewed and printed at the following website: [http://www.rlc.dcccd.edu/emergency](http://www.rlc.dcccd.edu/emergency).

If you have questions or concerns, please contact the Richland College Office of Emergency Management. This office can be reached by phone (972/238-3794) or by e-mail (rlcoem@dcccd.edu).

**FINANCIAL AID** If you are receiving any form of financial aid, you should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate after the drop date are also subject to this policy.

**FOOD AND BEVERAGE POLICY** It is **departmental policy** not to allow the consumption of food, water, and other beverages in any chemistry classroom. It is also the college policy that
food, water and drinks are prohibited in all technology classrooms, including all chemistry classrooms and laboratories.

**OBTAINING FINAL COURSE GRADES** Grades are available through Richland’s Touchtone Telephone System at 972-613-1818 or online through eConnect at [www.econnect.edu](http://www.econnect.edu). Your grades will also be printed on your Student Advising Report, which is available in the Admissions and Student Records Office, T170.

**RELIGIOUS HOLIDAYS** Absences for observance of a religious holy day are excused. A student whose absence is excused to observe a religious holy day is allowed to contract with the instructor to take a make-up examination or complete an assignment within a reasonable time after the absence.

**SIX DROP ISSUE**

STOP BEFORE YOU DROP: For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions.

Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: [https://www1.dcccd.edu/6drop](https://www1.dcccd.edu/6drop)

**THIRD ATTEMPT TO ENROLL IN A COURSE** Effective for Fall Semester 2005, the Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. All third and subsequent attempts of the majority of credit and Continuing Education/Workforce Training courses will result in additional tuition to be charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 Semester. [See Third Attempt to Enroll in a Course at http://www.dcccd.edu/thirdcourseattempt/](http://www.dcccd.edu/thirdcourseattempt/)

**WITHDRAWAL FROM THE COURSE** If you are unable to complete this course, it is your responsibility to withdraw formally. The withdrawal request must be received in the Registrar’s Office by the drop date given elsewhere in the syllabus. Failure to do so will result in your receiving a performance grade, usually an “F.” If you drop a class or withdraw from the college before the official drop/withdrawal deadline, you will receive a “W” (Withdraw) in each class dropped. For more information about drop deadlines, refer to the current printed Credit Class Schedule, contact the Admissions/Student Records office at 972-238-6100 or 6101 (Thunder duck Hall, T170), or contact the division office.

Richland College is piloting its Quality Enhancement Plan (QEP) in select classes. The QEP provides techniques, practices, and tools to help students develop the habits, traits or behaviors needed to be effective and successful lifelong learners in college and in life. For more information, please log onto [http://www.richlandcollege.edu/qep/](http://www.richlandcollege.edu/qep/)

Students are encouraged to discuss academic goals and degree completion with their instructors. Specific advising is available throughout the semester. Check [http://www.rlc.dcccd.edu/advising/](http://www.rlc.dcccd.edu/advising/) for more details.
COURSE CALENDAR:

- **4th Class Day:** July 14th, 2017 (F)
- **Last day to Withdraw (With a grade of W):** Aug 3rd, 2017
- **Exam # 1:** M July 17
- **Exam # 2:** M July 24
- **Exam # 3:** M July 31
- **Exam # 4:** M Aug 7

**Final Exam - Aug 10th, 9:40 AM – 11:40 AM at WH 145**

CLASSROOM POLICIES:

- You should come to class prepared to discuss and ask questions concerning the reading and problems.
- Quizzes will be given to help you assess your progress.
- Quizzes are due after completion of every chapter.
- All Quizzes should have the following on the top of the sheets:
  - a) Name of the student
  - b) Name of the course and section
  - c) Date
  - d) Quiz #
- No internet surfing is allowed other than Lecture material during the Lecture.
- All exams will be multiple choice and may include a free response section. Students are responsible to come to exams with all necessary materials for examination. Testing materials remain the property of the instructor.
- For Scantrons’ Questions only marked Answers will be considered towards your grades.
- Final exam is comprehensive and can replace your lowest exam grade, thus counting twice.
- No make up exams will be given without prior approval. There is no make up for the final exam.
- Correct any missed problems on returned quizzes, labs and tests. Pay special attention to these when preparing for a test and the comprehensive final exam.
- All programmable calculators will be cleared upon entering exams.
- No late work will be accepted without prior written approval. **If you might be arriving late to class be sure to email me your assignment prior to the deadline to avoid getting a zero.**
- No CROSS-TALKING will be allowed during the lecture hours.
- Please keep your cell phones on the silent mode during the lecture.
- No food items are allowed in the classroom accept water or other drinks.
- Academic dishonesty will be prosecuted to the fullest extent according to college policy.
- **Students should keep all their graded papers till the end of the semester.**

FEEDBACK: Please feel free to give me your comments and suggestions either by email or in person.
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<thead>
<tr>
<th>DATE</th>
<th>LECTURE</th>
<th>LAB</th>
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<tbody>
<tr>
<td>T July 11</td>
<td>Syllabus Intro; Chap. 12.1 thru 12.4</td>
<td>Safety Training &amp; Molecular Polarity Activity</td>
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<tr>
<td>W July 12</td>
<td>Finish Chap. 12 Intermolecular Forces</td>
<td>Exploring the Solid State parts A and B</td>
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<td>R July 13</td>
<td>Chap. 13.1 thru 13.6 Solid State</td>
<td>Exploring the Solid State, parts C, D, and E</td>
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<td>F July 14</td>
<td>Finish Chap. 13; Chap. 14.1 thru 14.5</td>
<td>Solution Concentrations</td>
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<td>M July 17</td>
<td><strong>Exam 1 on Chap. 12, 13, 14.1 – 14.5</strong></td>
<td><strong>Lecture in Lab</strong> Chap. 14.6 – 14-7 Colligative Properties</td>
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<td>T July 18</td>
<td>Chap. 15.1 thru 15.3 Rates</td>
<td>Molar Mass by Freezing Point Depression</td>
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<tr>
<td>W July 19</td>
<td>Chap. 15.4 thru 15.5 Rate Laws</td>
<td>Factors Affecting the Rate of a Reaction</td>
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<td>R July 20</td>
<td>Finish Chapter 15</td>
<td>Crystal Violet Kinetics with Microlab</td>
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<td>M July 24</td>
<td><strong>Exam 2 on Chap. 14.6, 14.7, 15</strong></td>
<td><strong>Lecture in Lab</strong> Chap. 16.1 thru 16.4 Equilibrium</td>
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<td>T July 25</td>
<td>Finish Chapter 16</td>
<td>Keq for FeSCN$^{2+}$ using Microlab</td>
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<td>W July 26</td>
<td>Chap. 17.6 thru 17.8 pH</td>
<td>Le Chatelier's Principle</td>
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<tr>
<td>R July 27</td>
<td>Finish Chapter 17</td>
<td>Finding pH with Indicators</td>
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<tr>
<td>M July 31</td>
<td><strong>Exam 3 on Chap. 16 and 17</strong></td>
<td><strong>Lecture in Lab</strong>: Chap. 18.1 thru 18.3 Buffers</td>
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<td>T Aug 1</td>
<td>Chapter 18.4 Titration Curves</td>
<td>Finding Ka three ways</td>
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<tr>
<td>W Aug 2</td>
<td>Chap. 18.5, 18.6 Precipitation Chap. 19.1 thru 19.4 Entropy</td>
<td>Finding Ka (con’t)</td>
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<td>R Aug 3</td>
<td>Finish Chapter 19</td>
<td>Building a Redox Series</td>
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<td>M Aug 7</td>
<td><strong>Exam 4 on Chapters 18 and 19</strong></td>
<td><strong>Lecture in Lab</strong>: Chap 20.1– 20.5 Electrochemical Cells</td>
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<td>T Aug 8</td>
<td>Finish Chapter 20</td>
<td>Voltaic and Electrolytic Cells</td>
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<tr>
<td>W Aug 9</td>
<td>Finish Chapter 21</td>
<td>Review for Final</td>
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<tr>
<td>R Aug 10</td>
<td><strong>Final exam on Chapters 12 thru 21</strong></td>
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