Science of Contemporary Issues III
CHEMISTRY 1003-01, Spring 2014
SYLLABUS, POLICIES, AND PROCEDURES

Lectures: M/W 12:00-1:30, Sturm Hall 253

Labs: M-Th 2:00-4:50 pm or M-Tu 7:00-9:50 pm, BW15

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Office hours: Wednesdays 2:00-3:00 p.m., Thursdays 12:00-1:00 p.m. and by appointment.
Teaching Assistants:

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OTHER IMPORTANT DU RESOURCES

Disability Services Program.
Provides accommodations at no cost to all qualified students.
http://www.du.edu/studentlife/disability/dsp/

Learning Effectiveness Program
Provides academic support services beyond basic academic accommodations.
http://www.du.edu/studentlife/disability/lep

The Health and Counseling Center.
Free and confidential
http://www.du.edu/duhealth/counseling/

Office of Student Conduct
Honor Code Statement: www.du.edu/honorcode
Student Conduct Policies and Procedures http://www.du.edu/studentlife/ccs/policies

REQUIRED MATERIALS

A. **"Chemistry in Context: Applying Chemistry to Society"**, **7th Edition**, Catherine Middlecamp, Published 2012, McGraw Hill. EBook is also available, see below

B. **Connect:** McGraw Hill's web-based homework and assignments. Access codes can be purchased with the book via **ConnectPlus**. Access through **Connect** will be possible through blackboard, but you will need to complete the registration process using your access code. **You will need to register again this quarter!**

C. **Clicker:** for class participation by TurningPoint ISBN: 9781934931400. This will need to be registered through Blackboard in order to receive points for participation and some quizzes.

D. **Scientific calculator**. A non-programmable calculator is required. It should have the capabilities for square roots, logarithms, and exponential (scientific) notation operations. The calculator is needed for problem sets, quizzes, and exams. BRING IT WITH YOU TO EVERY CLASS AND LAB.

COURSE WEBSITES

http://blackboard.du.edu
course handouts, labs, announcements, etc. Check this site daily for info.

http://connect.mcgraw-hill.com/class/c_kristensson_chem1003-01_m_w
Access to homework, additional problems, tutorials, text materials, etc. You are required to register online for access to this site.

Overview:
No late work will be accepted in this course. Any worksheets will be due during the first 10 minutes of the next lecture section.

There will be **NO** makeup exams and **NO** makeup work.

Point Totals:

Quizzes/In Class exercises (lowest is dropped)	7%
Clicker and Participation (one is dropped)	5%
Connect Online Homework (one is dropped)	8%
Laboratory (8 at 5% each)	40%
Exams (two exams at 10%, one final at 20%)	40%
Course Total	**100%**

Quizzes/In-Class Exercises
The quizzes will cover recent material from both class and lab. The quizzes may be handwritten or clicker. In-class exercises may include group work or individual worksheets.

Clicker/Participation
You must register your clicker online via the blackboard website. No score will be assigned based on answers being right or wrong. To earn the points from Clicker sessions, you must answer at **least 75%** of the questions posted.

Online Homework
Online homework sets will be assigned regularly using *Connect*. The homework problems will help you evaluate your understanding of the course material and provide review materials for exams. Your top eight scores will be counted.

Laboratory Reports and Worksheets
Lab work will make up 40% of your grade.

- **A library/research project will count for two Lab grades (10% of your grade).**
- Lab reports and **PRE-LABS** are due to your TA at the BEGINNING of each lab (after 10 minutes, assignments are considered late and will receive a grade of zero).
- Pre-lab quizzes will be administered during the first 10-15 minutes of your lab and count toward your lab grade. No additional time will be provided for late students.
- Materials for conducting each experiment will be available only during the week designated in the syllabus.

See Laboratory Info page below for details.

Exams
Bring a non-programmable calculator to all exams.

The dates for the three scheduled exams are:
- **Wed, Apr 9th - 12:00pm - 1:30 pm**
- **Wed, April 30th- 12:00pm - 1:30 pm**
- **Mon, June 2nd - 12:00pm - 1:50 p.m.**

*note, I reserve the right to change these dates as necessary, and will notify you immediately of any modifications to the above dates.
There will be **NO makeup exams**.

Exams focus on the information covered since the beginning of the term or previous exam. However, *knowledge of chemistry is cumulative*, therefore material covered in earlier chapters will often be necessary to answer questions.

The final exam will cover the entire term.

Grade disputes are subject to policies of the Chemistry Department and initially must be directed to Prof. Cowger.

Expectations for Academic Integrity

The principles and penalties of the DU Honor Code and Academic Misconduct policy will be upheld. All exams are to be completed individually. I expect that all of your work for credit will be conducted with academic integrity. Any breach of academic integrity will receive a very strict penalty. If cheating occurs on any pieces of graded work, the minimum penalty will be an automatic grade of ZERO for that assignment. Falsification of data is a serious offense in research in any industrial or academic setting. I expect that each of you will promote academic integrity by reporting to me any breach of such, as prescribed by *Constructive Action*. *Constructive Action* is defined as reporting any action contrary to the Honor Code to someone in a position to take action – such as a faculty member, Dean, Campus Safety officer, or administrator. Failing to take such action may result in a violation of the *Non-Action* policy.

It is encouraged for students to work in groups on suggested homework problems and for exam review. However, each student is required to do his/her own share of work. Discussion is allowed regarding homework assignments, but the final submitted answer must be your own (i.e. someone else *cannot* do your homework for you, including online work).

Academic Integrity summary:

Exams and quizzes: Completed individually without books, notes, headphones, or notes programmed into a calculator or other electronic device. (If there is to be a group quiz, I will notify you of the protocol for such a quiz.)

Online homework: You are encouraged to discuss the problems with your classmates, but the answers you enter are your own.

Lab Reports: Fabricating information, such as data for a lab report is a violation of the Academic Integrity Policy. Lab experiments are conducted in pairs, each student must record their data on to their own worksheets or reports. Post lab questions must be completed individually.

Distractions

Students must respect the classroom environment. During lecture all cell phones and electronic devices shall be turned off. Unless specifically directed by the instructor, students shall refrain from sending email and instant messages, or from engaging in other activities (facebook, watching youtube, reading non-course materials, engaging in private conversations and so on) that disrespect the classroom environment and learning conditions for others. Should your activity in the classroom result in disruption for either myself or for the other students, you may be dismissed from the lecture.

Make-Up Work

If you must miss a class or exam, inform me **IN ADVANCE**. The only valid excuses for missing any assignment or class are a family emergency (must be reported to Office of Health and Counseling) or valid University event (must have info from Athletics Office, etc.). Since at least one quiz, homework, and participation grade is dropped, the choice to miss a class or assignment due to illness or other unforeseen event will not gravely impact your grade, nor is it an excused event. You may reschedule your **lab** time once per term, but this must **BE DONE IN ADVANCE** and completed during the week of the lab assignment with the consent of the TAs involved.

University Policy for Special Needs

Students with medically recognized and documented disabilities and who are in need of special accommodation have an obligation to notify the University of their needs. If you have questions concerning the services available for students with disabilities at DU please contact Disability Support Services, so that your needs may be addressed. DSS is located on the 4th floor of Ruffatto Hall, 1999 E. Evans Ave. Official notification regarding disability conditions that may impair a student's academic performance must be communicated to me by DSS.

Course overview

This is the third in a three course series. This course is dedicated to understanding chemistry as it applies to materials, life forms, medical and nutritional applications. This course assumes you have a foundation of the chemical principles developed in the first two courses.

Beside your involvement in the lecture component of this course, you are required to participate in the **laboratory component**. The laboratory is an important part of the course and experiments have been selected to support your learning of topics covered in the lecture. The laboratory work will solidify your study of chemistry through experimentation, data collection, and analysis.

Course goals

The course aims to improve your scientific understanding, more specifically your scientific literacy. At the completion of this course you will be able to:

- Articulate concepts and principles in chemistry and effectively apply scientific methods to ask questions, design and perform experiments, or judge arguments. Thereby increasing your ability to make better-informed decisions about science related personal and social issues.
- Recognize science as a process that considers uncertainty when drawing conclusions from scientific evidence and making predictions from existing data.
- Apply and distinguish between qualitative and quantitative forms of analysis and evidence, and demonstrate skills for using and interpreting quantitative information in various formats based on validation and replication of results.

As a team, we will work to achieve the above goals by:

- learning and using chemical terms
- increasing your understanding of the chemical basis of many natural phenomena
- developing data analysis and scientific thinking skills
- applying your knowledge to identify and solve problems
- developing your laboratory skills
- enhancing your scientific communication skills

Content is important but learning concepts and ideas is essential. It is far more beneficial in the long run to learn how to **identify and apply unifying principles** to the ever-changing planet around us rather than to simply recall facts. In short, understanding concepts will enable you to grasp the big picture that you can fill in with new facts and details later in life when a new environmental or energy debate arises.

Soon, you will be experiencing the excitement of using chemistry to help understand the intricacies of the world around you!!!

Attendance/Preparation

- Students are expected to attend ***every*** class, as grades are given for your Clicker response system, in class quizzes and exercises. Some of the material provided in the lecture will not be in the book or published in the lecture slides online. You are expected to be responsible for this material.

- You are responsible for obtaining all the handouts and other materials provided during the term including the materials handed out in class, lab, or on Blackboard.

- It is expected that students have **read** the material that will be covered in the lecture **prior** to class. You are responsible for all material covered in class, including activities, demonstrations, and videos available online, in labs AND in the assigned readings.

- ***Be considerate of space and sounds in the classroom.*** Out of respect to your classmates, please observe the following rules during lectures:

  - Arrive on time, seated and ready to listen when the lecture begins. If an emergency causes you to arrive late, please enter quietly.
  - Do not begin to pack up your books before the class is over
  - Do not have conversations with your neighbor during lecture
  - **Turn off** your cell phone

- Be consistent, thorough, and organized in your studying.

- Use your **Clicker** during class. **Complete the online registration of your clicker by the second lecture** to receive credit for in class participation and attendance. If you have trouble registering, email me or come during office hours.

- Register on **Connect** to perform regular homework and get credit for it.

- Cell phone use of any type will not be permitted in class or during laboratories. This means you must bring a separate calculator with you for exams and quizzes and are not to use your phone as a calculator. No headphone use during class or laboratories is permitted at any time.

- Classroom and any online discussions should be respectful to everyone and relevant to the topic we are discussing.

- Any disruptions in class will be addressed by the instructor according to the DU Code of Student Conduct. (See http://www.du.edu/studentlife/ccs/policies for more information about the conduct system.)

Important Registrar Deadlines: Last day to drop without record: March 30. Last day to drop without approval: (W grade) May 4. Last day to drop with approval: May 18.

Labs are conducted in 15 Boettcher West. There are five laboratory sections scheduled for 2 hr 50 min.
The lab will consist of

1) Pre-lab quiz (first 10-15 minutes)
2) In-lab work and data collection
3) Post-lab report and calculations.

Prior to your lab section, you must complete your pre-lab questions on a SEPARATE sheet of paper. ***You will not be granted access to the lab without having completed and handed this in.***

MSDS: No print outs of MSDS material will be accepted. You are required to obtain the "Hazards Identification" information assigned and WRITE OUT the information for your pre-lab. **This information must be completed prior to entering the lab** One resource: http://www.sigmaaldrich.com

One goal of lab is for you to begin asking questions about the information prior to conducting the experiment. Along these lines, you may be required to design and conduct experiments to answer your questions.

Two missed labs will result in a failing grade.

A Library Research Project will be part of the laboratory grade in the course. This includes library instruction, research, written and oral presentation.

General Information

You will be working with a lab partner unless otherwise notified. Experimental work will be done in **pairs**, with each member **participating equally** in the lab manipulations, data analysis, and questions. Data will be shared between you and your partner; however, **each student must record their own data DURING THE LAB PERIOD.** You may discuss pre-lab, in-lab, and post-lab work with your partner. **Include your partner's name on all lab assignments.**

- Budget approximately an hour ***each*** for pre- and post-laboratory assignments.
- Familiarize yourself with procedures and supplementary items to maximize efficiency.
- All experiments must be completed during their **assigned** lab period.
- Lab reports are due at the beginning of the next laboratory session. No late lab reports will be accepted.
- A tentative schedule of laboratory classes is given at the end of this syllabus.
- You must make every effort to attend every laboratory session. Do not be late to lab class as there is a strict limit on the amount of time available to perform the activity. If you arrive late you will not be given extra time to complete the assignment or quiz. If you are late you may be told you cannot commence the experiment.
- Two missed labs will result in a failing grade.
- **There will be no makeup laboratory sessions**.
- **TA's initials are required prior to AND after the lab on your data sheets.**

LAB Safety

There is an element of hazard in every laboratory course. Safety will be covered as part of the first lab period.

You are REQUIRED to wear approved safety goggles while in the lab. These will be provided for you as you walk in the lab.

Clothing requirements:

Shoes must cover entire foot
No bare legs
No loose or baggy clothing (nothing that will interfere with lab activity)
Long hair must be tied back
Goggles must be worn at all times.

If you are inappropriately dressed, you will not be permitted to attend the lab session for your own safety and the safety of others around you.

Pagers, cell phones, music players, and headphones of any kind may not to be used in the lab.

Food and drink are prohibited in the lab

Label all containers; unknown contents creates danger

Dispose of all wastes properly! If you are unsure of how to dispose of your wastes, ask your TA.

Leave no trace. Clean up after yourself.

LAB: TENTATIVE SCHEDULE **2014 CHEM 1003**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SAT.
March 23	24 **First Lecture**	25 **Labs Begin April 1**	26	27	28	29
31	31	April 1	2	3	4	5
			Lab 1: Polymers and Recycling			
6	7	8	9	10	11	12
			Lab 2: Synthesis of Aspirin			
13	14	15	16	17	18	19
			Lab 3: Analysis of Analgesics and Aspirin from Lab 2			
20	21	22	23	24	25	26
			Lab 4: Fats in your Foods			
27	28	29	30	May 1	2	3
			Lab 5: Library Project			
4	5	6	7	8	9	10
			Lab 6: Fermentation by Yeast: Competition			
11	12	13	14	15	16	17
			Lab 7: Library Project Presentation in Lab			
18	19	20	21	22	23	24
			Lab 8: DNA Isolation			
25	26 Memorial Day Campus Closed	27	28	29	30	31
June 1	2	3	4	5	6	7

LECTURE: TENTATIVE SCHEDULE — 2014 CHEM 1003

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SAT.
March 23	24	25 Intro. And Polymers Chapter 9.0-9.6	26	27 Chapter 9.0-9.6 Polymers cont'd	28	29
30	31	April 1 Waste, Recycling and Composting 9.7-9.8	2	3 Recycling and polymer structure, 9.7-9.8	4	5
6	7	8 Ch 10.0-10.3: Functional Groups, Representing Molecules	9	10 **FIRST EXAM**	11	12
13	14	15 How Medication Works: Receptors 10.3-10.5	16	17 Ch 10.6: Chirality	18	19
20	21	22 Ch 10.6-10.7: Chirality cont'd, Steroids	23	24 10.8-10.9, Intro Ch11	25	26
27	28	29 Chocolate, Fermentation and Food	30	May 1 **SECOND EXAM**	2	3
4	5	6 Ch 11 Fats, Sugars, Carbs	7	8 FDA/Nutrition Labels: Natural Pork? Organic oreos?	9	10
11	12	13 Ch 11 Nucleic Acids and Protein	14	15 Ch 12: DNA, Building blocks of life	16	17
18	19	20 Ch 12: DNA to Genes to Proteins. How we work	21	22 Ch 12: Gene Modification	23	24
25	26	27 Chemistry of Drugs and Diseases	28	29 Exam Review Session	30	31
June 1	2 **Final -01**	3 **Final -02**	4	5	6	7