CHEM 163 Syllabus & Schedule SPRING 2020

Who should take this course?

Chemistry In Modern Society (Chem 163) is a 3 credit course intended for *non-science majors* and it counts towards general science requirements.

Course Content:

This course presents the basic principles of chemistry with intellectual honesty but without the focus on theory and mathematical analysis used in courses for majors. The focus is instead on practical applications of chemistry that we see in everyday life that have significant impact, both good and bad, on human society. Wherever possible chemical demonstration are done in class to illustrate the concepts. The approach throughout is to provide a background of chemical principles and processes and relate them to their impact on human society. Problems involving environmental pollution, energy sources, nuclear chemistry, and human health are discussed. Topics are presented that introduce a new approach, Green Chemistry, to designing chemicals and chemical processes that are beneficial for human health and the environment.

Course Objectives:

1. Understand how observations, the formulation and testing of hypotheses and the scientific method are used to discover the principles of chemistry and prepare materials used in real world applications.
2. Understand the meaning of physical and chemical properties, measuring properties like mass, volume, density, temperature, etc. with proper units and use them to distinguish pure and impure substances, elements, compounds, and mixtures.
3. Be able to read the periodic table and associate the symbol and other numbers there with element name, subatomic particle, and mass.
4. Understand the periodicity in physical and chemical properties like thermal and electrical conductivity, specific heat capacity, atomic size, ion size, ability to lose or gain electrons, form ionic or covalent compounds, etc. and highlight how periodic table guides in making new materials with desired properties.
5. Be able to understand what chemical formulas mean, what bonds them together, visualize their overall structure and what leads to their bulk physical properties like its state of matter (solid, liquid, or gas), viscosity, vapor pressure, boiling point, melting point, etc.
6. Be able to appreciate the significance of chemistry in your daily life. Understand household chemicals and their properties like acidity and basicity. Understand the relationship between chemicals found in food, air, water, and soil.
7. Understand chemical energy involved in chemical reactions and its relation to other forms of energy like heat and electricity.
8. Be able to evaluate the formula mass and the concept of mole.
9. Understand the law of conservation of mass and the requirement to account for the number of atoms before and after a reaction.
10. Be able to evaluate the amount of materials needed and the amount of products that can be formed when a chemical reaction is carried out.
11. Be able to critically evaluate issues related to science described in communications media. Be able to assess ethical, moral, economical, health, and environmental impacts from all sources and make informed decisions as consumers and voters.

Instructor Information:

Dr. Julie Leventhal
Email through Blackboard

Section Information:

Class Meets every Friday 10:00 to 12:50 AM in Remsen 017

Textbook:

21st Century Chemistry, Kimberly Waldron, Roberts and Company Publishers, 2014. ISBN 978-1-936221-39-4. You can buy from textbook from any source. The publisher link is given here for your easy reference. Roberts and Company: Price for new book is $80
http://www.roberts-publishers.com/

Class Schedule & tentative exam schedule:

Note: Class meets every Friday as per QC's Friday class schedule. Here is the breakdown of class meeting dates with anticipated chapter coverage and exam dates.

1/31: Chapter 1
2/7: Chapter 2
2/14: Chapter 3
2/21: Exam 1. Regular class will follow after class exam. Chapter 4
2/28: Chapter 4 Bonds
3/6: Chapter 6 Gases
3/13: Chapter 6, 7
3/20: Chapter 7 Chem Rxns
3/27: Chapter 7, 8 Water
4/3: Exam 2. Regular class will follow after class exam. Chapter 9 Solns
4/17: Chapter 10
4/24: Chapter 12
5/1: Chapter 13
5/8: Catch up/ REVIEW
5/15: Final Exam – cumulative of all chapters covered

Chemical Demonstrations to illustrate the topics covered will be included in the exams. Hence, pay close attention to the demonstrations and try to understand them. Ask questions. If you missed a class, you need to check with your classmates and gather the notes.

Class Quizzes: You can expect quizzes during every class given once or twice during a class period. These test your understanding of what was done in class and if you are keeping up with the reading.

Class Exams: All material covered up to the previous class will be included for the exam. All exams are cumulative. Hence, keep reviewing all old material every week. Recalling old material is required for learning new material. Students are expected to take each exam; if you must miss an exam due to an actual emergency, the exam may be waived only if the professor determines such action to be warranted by the emergency and that you have behaved responsibly and have alerted the professor at the first opportunity. ***There are absolutely no makeup exams.*** Students who miss an exam will have it added to the total worth of the final exam (final exam would be worth **200pts**); **PROVIDED** that acceptable documentation of the absence is presented to the

professor. Without a legitimately documented reason, a grade of **0** will be assigned. **You *must* take the cumulative final exam to receive a passing grade in the course.**

How to Study for this course? Silence your cell phones and put it in your bag during class. Keep your textbook, scientific calculator and periodic table available during class. If you don't understand something ask me during question-answer time in class, or seek the help of free tutoring offered by the college and chemistry department. Quizzes are designed to help you understand the material. If you take all quizzes by coming to class on time and staying till the end of class, you can perform very well in the exams.

Course Grading:

Two class exams and one final exam: 60%
Quizzes: 25%
Homework: 15%

To be fair to all students, absolutely no extra credit assignments will be given to improve one's grade. Letter grades follow the college guidelines.

Do not cheat during quizzes and exams. All violations will be reported and appropriate actions as per college guidelines will be taken.

This policy and others related to candidates' issues are available to you at:
http://www.qc.cuny.edu/StudentLife/Documents/AcademicIntegrityPolicywithoutmemo.pdf

REASONABLE ACCOMMODATIONS FOR CANDIDATES WITH DISABILITIES

Candidates with disabilities needing academic accommodation should: 1) register with and provide documentation to the Special Services Office, Frese Hall, Room 111; 2) bring a letter to me indicating the need for accommodation and what type. This should be done during the first week of class. For more information about services available to Queens College candidates, contact: Special Service Office; Director, Miriam Detres-Hickey, Frese Hall, Room 111; 718-997-5870 (Monday – Thursday 8:00 a.m. to 5:00 p.m. & Friday 8:00 a.m. to 4 p.m.).