

JC Chemistry 141.03 General Chemistry I

FL 2017 5 credits Course dates: 9/5/17-12/21/17 Lec M,W,R 1-2:17; lab W 2:30-5:30

Instructor: Dr. Mark E. Ott Phone: 796-8574 E-mail: ottmark@jccmi.edu Office: JM 234B

Official course website: docott.com/cem141 You are responsible for everything posted there!

Office hours Or by appointment

The best way to get a hold of me is via E-mail, as I check it several times a day. This is best for more complicated questions.

Course Description: This course is required for most sciences, engineering, and pre-professional health majors. Students who are required to take organic chemistry for their major should enroll in CEM 141 during their first semester. Topics include atomic and molecular structure, periodicity, chemical bonding, states of matter, kinetic theory and stoichiometry.

Pre-req: MTH 131 and ENG 085 or pre-req. Recent chemistry (HS or JC CEM 131) success recommended

Required materials: scientific or graphing calculator ; Web-enabled computer/tablet/laptop ; Course pack from JC bookstore

Text: Openstax: Chemistry

Academic Dishonesty: *I do not allow any cheating. There will be no leniency on this point. Submitting someone else's work as your own is dishonest and unfair to that person. Penalties are severe **including expulsion**, this is your only warning. The official JCC policy can be found at*

<http://www.jccmi.edu/policies/Academics/Policies/1004.pdf>

Here is the core of the policy:

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

Plagiarism is defined as the failure to give credit for the use of material from outside sources.

Plagiarism includes but is not limited to:

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

Cheating is defined as obtaining answers/material from an outside source without authorization.

Cheating includes, but is not limited to:

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

Attendance: No role will be taken in lecture, but attendance is expected. Lab attendance is mandatory. **Missing 2 or more labs will result in an incomplete or failing grade for the course.** The student is responsible for all information presented in lecture and lab.

Block Quizzes: This course material is considered difficult, and if you get behind, it is very difficult to catch back up. Therefore, there are no tests per se. There are 19 'block quizzes' (each worth 30 points) which cover

2-3 days worth of lecture material. The schedule for these are available on the course website, and are listed later in this syllabus. Any day there is NOT a block quiz, there will be homework which is due at the beginning of the class. Homework is never accepted after 5 min into the class period. Your lowest block quiz grade will be thrown out. If you miss one due to illness, family emergency, whatever, you will simply use your lowest block quiz for that 'miss'. Quizzes can never be taken late. Ever.

Cell Phone Rule: When you come to class, leave your cell phone off and in your bag. If you pull out your cell phone during class during lecture/quizzes/anything, you will be asked to leave the room immediately. The second time your are caught with cell phone you will be asked to leave the course.

Study Hints: There is a nice webpage on the JCC Science department page http://www.jccmi.edu/Departments/Science/How_To_Study_Science/ or <http://tinyurl.com/j1gp> with study hints and how to be successful in this and other science classes. It is worth your time to peruse it sooner rather than later.

Tutors: Tutors (plus additional services for academic success) can be accessed by calling 796-8415 or by stopping by the Center for Student Success, Bert Walker Hall Room 125.

Use-Less-Paper: In an effort to reduce the number of trees cut down in the world, the amount of 'virgin paper' used in this class will be kept to an absolute minimum. Very few handouts are given in class and lab schedules/information sheets are posted on the course website. The information here should not be printed out if possible. All quiz answers will be written on 'recycled' paper, defined as paper with writing from some previous material on one side and blank on the other. This recycled paper (which you can get from the instructor) is to be used whenever written material is to be turned in. (prelab questions and homework for example)

Late Work: You may turn labs up to **72 hours** after it is due. After that, the grade is a zero. Exceptions will be dealt with on a case by case basis and are very rare. **Take home quizzes and other 'homework' problems are not taken late.**

JC General Education Outcomes: This course satisfies GEO #4, [Demonstrate Scientific Reasoning](#)

Grading: Approximately every three weeks, grades will be posted on the course blog. It is the student's responsibility to periodically check the accuracy of the posted scores. *1 week after grades are posted, they can not be changed, so make sure you check often!*

<u>Assignments</u>		
18 Block quizzes @ 30 pts = 540		19 given, 18 counted
~12 1 week lab projects @ 15-25 pts = 220ish		
~19 Homework problem sets 5-15 pts per = 195		
Total Points Possible = 965ish		

Your final grade will be based on the following percentages. Any one cut off MAY move down, never up:

4.0 : >90.00% 3.5 : 85.00 – 89.99 3.0 : 80.00 – 84.99 2.5 : 75.00 – 79.99
 2.0 : 70.00 – 74.99 1.5 : 65.00 – 69.99 1.0 : 60.00 – 64.99

Note: The schedule and procedures in this syllabus are subject to change.

Schedule:

Phase 1	Phase 2	Phase 3
Basic Chemistry Definitions	Bonding Introduction	Introduction to Gases; Pressure
Units and Numbers	Electronegativity and Bond	The Ideal Gas Law

	Properties	
Significant Figures	Drawing Lewis Structures	Gas law Calculations
Unit Conversion and Density	Resonance and Formal Charge	Dalton's Law of Partial Pressures
Energy and Enthalpy Introduction	Octet Rule Exceptions	Kinetic Molecular Theory
Atomic Structure: History and Current Thought	Electron Domain Geometry	Van Der Waals' Gas Equation
Atomic Mass	Molecular Geometry	Chemical Equations: Balancing
Diatomic Species and Ions	Dipole Moment	Chemical Equations: Types
Waves and Quantized Energy	Hybridization	Introduction to Aqueous Solution Chemistry
Line Spectra	Multiple Covalent Bonds	Precipitation Reactions and Solubility Rules
Bohr's H Atom	Valence Bond Theory, Molecular Orbital Theory	Practical Precipitation
Quantum Numbers		Acid-Base Neutralization Reactions
Electronic Configuration		REDOX reactions
Periodic Table Introduction & Effective Nuclear Charge		Stoichiometric Calculations
Periodic Trends: Atomic Radius		Aqueous Phase Reactions Calculations
Periodic Trends: Ionization Energy		Limiting Reagents
Periodic Trends: Electron Affinity		Human Caused Global Warming
Atomic Body Chemistry		Thermodynamics Intro: Hess's law
Groups of the Periodic Table		Enthalpy of Formation
		Calorimetry
		Humans & Science
		Pollution Chemistry in Troposphere
		Stratospheric Ozone
		Toxicity

Tentative lecture schedule:

Day of term	proposed Course
1	Introduction
2	1.1
3	1.2
4	1.2
5	1.3
6	1.3
7	1.4
8	1.4
9	1.5
10	1.5
11	1.6

12	1.6
13	1.7
14	1.7
15	2.1
16	2.1
17	2.1
18	2.2
19	2.2
20	2.3
21	2.3
22	2.4
23	2.4
24	2.5
25	2.5
26	2.5
27	3.1
28	3.1
29	3.2
30	3.2
31	3.3
32	3.3
33	3.4
34	3.4
35	3.5
36	3.5
37	3.6
38	3.6
39	3.6
40	Overpopula tion
41	3.7