

JOHNS HOPKINS UNIVERSITY
Department of Chemistry
Introductory Chemistry –I Section 030.101.11 Summer 2017

COURSE CONTENT

Instructor: Dr. Sunita Thyagarajan

Office: NCB 214

Phone: (410) 516 7864

Email: sunita@jhu.edu

Lecture: MTThF 9:30 – 11:30 a.m. in Remsen 233

Office Hours: TF 11:45 – 12:45 or by appointment

General Course Description:

The course includes concepts of atomic structure, periodic system, chemical bonding, nomenclature, stoichiometry, weight relationships, gases, liquids and solids, solutions, chemical reactions, thermodynamics and equilibrium.

Course Materials:

Books: Chemical Principles: The Quest for Insight by Atkins, Jones and Laverman (6th Edition) Available in the Bookstore.

CPS Units: Clickers (required)

Homework Assignments: Sapling Learning (required) (see link below for registration):

<http://www2.saplinglearning.com/help/student-single-sign>

You can register up to two weeks before the first day of class.

Optional: Study Guide and Solution Manual.

Grading:	Hourly Tests (3)	50%
	Final Exam	25%
	Homework	20%
	Clickers	5 %

	Total	100%

Exam schedule: June 8, June 15 and June 22

Final exam: June 30th (last day of classes for summer –I) in Remsen 233.

Guidelines:

*Makeup tests are not given. If you miss a test, the average of the scores of the other mid-terms will be used in place of the exam you missed. **The final exam cannot be rescheduled under any circumstances.***

You may bring a one-sided cheat sheet and a scientific calculator for the mid-term exams. For the final, you may use a two-sided cheat sheet and a scientific calculator.

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E-mail and Blackboard

Student e-mail (ID_number@jhu.edu) is an official means of communication for the University. It is expected that you check your student e-mail regularly and frequently, as you are responsible for information and announcements that will be sent to you. For this class, student e-mail will be used only for situations where timing is essential. All the necessary information will be communicated in class and via Blackboard and all assignments will be on the corresponding Sapling course page. You will have 4 days to complete homework assignments once they are issued. Homework will be assigned every Monday and Thursday.

Classroom Policies:

Attendance: You are expected to attend all classes. Classroom participation is encouraged and you will need to use your clickers as a part of the lecture. An attendance of > 80% based on clickers will give you the 5% for clickers use.

Academic Honesty: You are expected to be honest when taking any kind of tests. Any dishonesty in the classroom, such as copying someone else's results or using notes or books during testing may result in a zero grade.

Classroom Conduct: You are expected to behave appropriately in an academic setting. Any use of inappropriate language in the classroom will be grounds for disciplinary action. More information on the JHU code of conduct can be found at:
http://advanced.jhu.edu/wp-content/uploads/2013/01/AAP1101_CodeofConduct.pdf

Support Services: There are help sessions available to help you in this course. These are held from Sunday through Thursday between 6:30 and 8:00 p.m. in Remsen 140. Teaching Assistants are available to help you with lecture/homework and lab – related questions.

Disability Services: Any student who may need an accommodation due to a disability, please make an appointment to see me during my office hours. In order to receive accommodations, a letter from Disability Services will be needed. More information on student disabilities can be found at: <http://web.jhu.edu/disabilities>

Cancellation of Classes:

If classes are cancelled due to inclement weather, information will be available by going to the website: <http://esgwebproxy.johnshopkins.edu/notice/>

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OUTCOMES:

Topics	Objectives
1. Calculations	<p>The student will be able to</p> <ol style="list-style-type: none">1. Interconvert moles, molecular weight and mass of substances.2. Use conversion factors in calculations involving solids, liquids, gases, solutions, and heat.3. Do stoichiometry calculations successfully.4. Use Gas laws and the Kinetic Molecular Theory to explain quantitative behavior of gases.5. Calculate and express solution concentrations in various ways, such as mass percent, parts per million, mole fraction, molality, and molarity.6. Calculate the magnitude and direction of heat flow for physical and chemical changes.
2. Nomenclature	<ol style="list-style-type: none">1. Name and write symbols for elements, ions, and compounds.
3. Equations	<ol style="list-style-type: none">1. Write balanced molecular ionic, and net ionic equations.
4. Chemical Theory	<ol style="list-style-type: none">1. Distinguish between chemical and physical properties and changes.2. Describe the major components of the atom and their location in the atom.3. Explain why Dalton's Atomic Theory is the basis for modern chemistry.4. Write symbols for isotopes and calculate the average atomic mass of an element.5. Use the Periodic Table to locate the various elements and predict their properties.6. Use gas laws or the Kinetic Molecular Theory to explain qualitative behavior of gases7. Predict direction of change in chemical reactions and measure equilibrium concentrations8. Predict the types of intermolecular forces within a compound.9. Describe the geometry and polarity of molecules and predict their physical properties.10. Explain reaction dynamics in terms of thermodynamic properties.11. Explain and describe solution equilibria based on thermodynamics of the systems.12. Determine solubility equilibria and effects of pH on solubility

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Week	Chapter	
1	F/3	
2	5/8	Exam I – June 8
3	9/11	Exam II – June 15
4	12/13	Exam III- June 22
5	6/10	Final Exam June 30