HOUSTON COMMUNITY COLLEGE
COURSE SYLLABUS
GENERAL CHEMISTRY I (CHEM-1411, CRN 58021)
Spring, 2018
DEPARTMENT OF PHYSICAL SCIENCES
Spring branch center
CHEMISTRY

Professor: Usha Kiran Kala
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E-mail: usha.kala@hccs.edu / ushakirankala@gmail.com
Office: Spring Branch Adjunct Faculty Office; Room# 613
Office Hours: Immediately before and after class
Time: Mon. (6:00pm-8:50pm) in Room # 519 & Wed. (6:00 pm-8:50 pm) in Room# 522

TEXT: CHEMISTRY – CHEMISTRY THE CENTRAL SCIENCE By Brown • LeMay, Jr. • Bursten • Murphy • Woodward • Stoltzfus

LABORATORY TEXT- Laboratory Manual for CHEM 1411-General Chemistry I
ISBN: 978-1-59984-380-3
Companion Website: www.pearsonmastering.com

COURSE DESCRIPTION: This course covers classification of matter, measurements, unit conversions, atomic structure, naming and formula writing of ionic and covalent compounds, chemical reactions, thermochemistry, electron configuration, stoichiometry of reactions, chemical bonding, molecular structure, gases, states of matter and periodicity.
The laboratory includes appropriate experiments to strengthen the knowledge and application of the above topics.

PREREQUISITES: ONE YEAR OF HIGH SCHOOL CHEMISTRY OR CHEM1405 AND MATH 1314
TASP requirement should be satisfied prior to this course; otherwise, students will be automatically dropped from this course. Students must be placed into college level reading and college level writing classes.

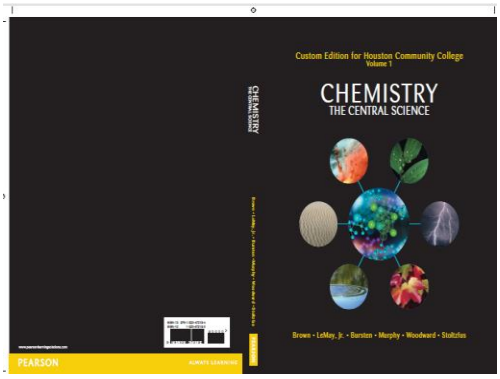
COURSE GOALS: This course requires students to show the importance of chemistry in their major areas. It will also provide the necessary knowledge about Reading, Writing, Listening, and Computer Applications. This course satisfies the following areas:
1. Critical Thinking
2. Communication Skills
3. Empirical and Quantitative Skills
4. Team Work
5. Social and Personal Responsibility

TEXT BOOK: –CHEMISTRY THE CENTRAL SCIENCE

Custom Edition for Houston Community College

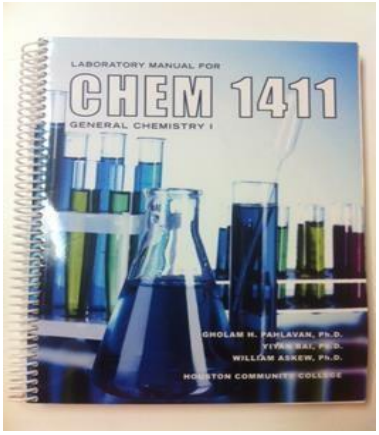
By Brown • LeMay, Jr. • Bursten • Murphy • Woodward • Stoltzfus

ISBN-13: ISBN-10: 978-1-323-47219-4 1-323-47219-3



LABORATORY TEXT- Laboratory Manual for CHEM 1411-General Chemistry I

ISBN: 13: 978-1-59984380-3



Tutors:
Free departmental Tutors are available at Spring Branch and Katy Campus
Go to http://hccs.askonline.net/index.mhtml for tutor help

Companion Website: www.pearsonmastering.com
Course name; general chemistry 1, course code: kala56833
CLASS SCHEDULE Spring,2018
CLASS MEETING DAYS: Monday (6:00pm-8:50pm) & Wednesday (6:00 pm. – 8:50 pm.)
MEETING LOCATIONS: Monday in Rm – 519 & Wednesday in Rm- 522

LABORATORY POLICY
Laboratory rules and safety instructions will be reviewed and observed. Eye protection is very important. During wet labs, eye glasses or goggles must be worn at all times during the laboratory period. Any student not wearing safety glasses at any time after the experiment has begun may be given a zero for that experiment. Laboratory reports are due one week after the experiment. Lab report will be submitted by each student individually. Identical and late lab reports are not acceptable. Students must come prepared to lab by reading and completing pre-lab activity for the given lab.

THERE WILL BE NO MAKE UP LAB:
Students are expected to attend every lab. Students are responsible to contact the instructor if any lab is missed, and make-up assignment should be submitted within one week of the missed lab.

Student Conduct

- Be seated on time.
- Respect yourself and others
- Classroom Discussion should be relevant to the topic
- Re respectful to the instructor during the lecture period (avoid interruption by talking)
- Cell phone and other electronic device should be turned-off before you enter the class.
- You may have a seating chart (if needed) by the instructor.
- Camera Phone and recording devices are not allowed to use in the class (refer to HCC-ADA policies for reasonable accommodations)
- Student is asked to behave as a responsible adult. You may ask to leave that day's class for inappropriate behave, and will receive a grade of "F "for the course for repeating VIOLATIONS.

DISABILITY SUPPORT SERVICES (DSS)

Any student with a documented disability (e.g., physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange for reasonable accommodation must contact the disability Services Office @ 713-718-5708. Faculty is authorized to provide only the accommodation requested by the Disability Support Services Office.

Academic Dishonesty:

Students must conduct themselves with honor and integrity to fulfill the course requirements.
Disciplinary action may be initiated by the college system against a student accused of
Scholastic dishonesty. Penalties may include a grade of "F" on the particular assignment, failure in the course, academic probation, or even dismissal from the college. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.

A Cheating on a test includes:

- Copying from another student's test
- Un authorized materials are used during the test
- Collaboration with another student during the test
- Buying, selling, stealing, transporting or soliciting in whole or part of the contents of an un administered test; or bribing another person to obtain a test that is to be administered

Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work for credit.
Collusion means the unauthorized collaboration with another person in preparing written work offered for credit.
In this case, the penalty will be "F" for this course. This is the standard policy for the Physical Science department of the Northwest Campus.

ATTENDANCE AND WITHDRAWAL POLICIES:

The HCC attendance policy states that students are expected to attend classes regularly. Class
Attendance will be checked daily. A student may be dropped from a course after missing six hours of the class time. Three tar dies / early exits are counted as one absence.
Students are responsible to make –up their missing works. It is their responsibility to contact the instructor to make-up their missing assignments. Students can withdraw from the class and receive a grade of "W" up until the "last day to drop from a class" for this semester. The instructor cannot give a "W" when the student is failing at the end of the semester. Students remaining and participating in class after the official withdrawal date will receive a grade. Students will receive a grade of "I" only if they have completed all course requirements with the exception of the final examination. An Incomplete (I) will automatically be converted to an "F" after one semester unless the required work is completed. Instructor can drop a student for excessive absences.

Policy Regarding Multiple Repeat of a Course:

Students who repeat a course three or more times may want to withdraw the course because you are not making the passing grades. Contact your instructor or counselor as early as possible. You may need to change your study habits,

reading and writing homework, test taking strategy, attendance, class participation, tutoring and other opportunities that might be available.

Examinations and Grading Systems:
Students will take three-unit Tests, and one Departmental Final Exam. If a student misses one of the unit Tests, the Final Exam score will replace the missing exam grade. (One Missed Test Only). Final course grade will be calculated accordingly. Final Exam grade will be cumulative, and it does not have any make-up Test. Scantron is required for all exams. Students are not allowed to leave the classroom while taking the exam. Please use the rest room before you come to take the exam.

EVERY STUDENT MUST TAKE THE FINAL EXAM ON May.9th, 2018 at 6:00 pm

If a student takes all THREE-unit tests, the lowest test score will be replaced by final exam score if the final exam score is higher.

GRADING
The overall score is based on the following:
TEST # 1 100 Pts.
TEST # 2 100 Pts.
TEST # 3 100 Pts.
Lab average 100 Pts.
FINAL EXAM 100 Pts.
TOTAL 500 Pts

A (90-100) % = 450-500	**4 points/ semester hour**
B (80 -89) % = 400-449	**3 points/ semester hour**
C (70 – 79) %= 350- 399	**2 points/ semester hour**
D (60- 69) %= 300-349	**1 points/ semester hour**
F (0- 59) %= 0-299	**0 point/ semester hour**

Lab Work (100 points) = (student points x 100) / Maximum lab points.
Pre-lab exercise should be completed before entering the lab.
Make- up test will be allowed for a student to take if student has any document of personal or family illness within two days from the day of the test.

Course Student Learning Outcomes:

1. Give names and formulae of elements, ions, and ionic and molecular compounds.
2. Categorize, complete, and balance chemical reactions.
3. Do chemistry calculations involving reaction stoichiometry and energy changes.
4. Relate the properties of electromagnetic radiation (frequency, wavelength, and energy) to each other and to the energy changes atoms undergo which accompany electronic transitions.
5. Identify the parts of the periodic table and the trends in periodic properties of atoms.
6. Relate the properties of gases with the gas laws and extend the application of these relationships to reaction stoichiometry, gas mixtures, and effusion/diffusion of gases.
7. Depict chemical bonding with dot structures and valence bond theory and determine the molecular shapes (geometry) of molecules based on VSEPR and valence bond theory.

Learning Objectives (Numbering system related to SLOs above)

1.1. Given the name, identify the formula and charge of positive and negative ions, and vice-versa.

1.2. Given the name, write the formula of ionic compounds, binary molecular compounds, and acids. Given the formulas of these types of compounds, name them.

2.1. Identify given reactions as precipitation reaction, acid base reaction or oxidation reduction reaction.

2.2. Starting with the reactants, complete the reaction by writing the reaction products.

2.3. Given the reactants and products, balance the equation for the reaction.

3.1. Convert amounts in units of mass or volume to moles, and vice-versa.

3.2. Given the amount of one substance in a reaction, calculate the amount of the other substances that react and form.

3.3. Identify the limiting reactant and excess reactant in a reaction where more than one reactant amount is given.

3.4. Determine the amount of the excess reactant that remains as unreacted excess.

3.5. Calculate energy changes associated with chemical reactions using Hess's law, standard enthalpies of formation, or calorimetry.

4.1. Relate frequency, wavelength, and the speed of electromagnetic radiation.

4.2. From the frequency or wavelength of electromagnetic radiation, calculate its energy.

4.3. Relate the energy change in the hydrogen atom to its electronic transitions using the Bohr model.

4.4. Identify and relate the four quantum numbers that can be associated with electrons.

4.5. Write the electronic configurations of atoms and ions, including the box diagram method. 5.1. Identify the common regions of the periodic table. Identify by name selected groups of elements in the periodic table.

5.2. Using the periodic table, identify the trend (increasing or decreasing in value) of selected properties of atoms such as atomic radius, ionization energy, and electron affinity. 5.3. Identify reaction similarities of elements within the same group in the periodic table.

6.1. Relate and calculate the pressure, volume, temperature, or amount of gas using Boyle's law, Charles' law, Gay-Lussac's law, Avogadro's law, the combined gas law, and the ideal gas law.

6.2. Perform stoichiometry calculations which involve gaseous substances.

6.3. Use Dalton's law and Graham's law to perform calculations involving gaseous mixtures and effusion and diffusion of gases.

6.4. Explain the assumptions of the kinetic-molecular theory of gases.

7.1 Draw the Lewis dot structure of molecules containing two or more atoms.

7.2 Based on the dot structure of the molecule, determine its electron domain geometry and molecular geometry based on VSEPR theory.

7.3 Given the dot structure, identify the hybridization of and geometry about each atom.

7.4 Explain the nature of sigma and pi bonding using hybrid atomic orbitals.

Course Calendar CHEM 1411, CRN- 58021, Spring 2018

WEEK ONE

17th Jan. - Course Introduction and Chapter 1

WEEK TWO

22nd Jan. – Safety Video, Safety Quiz and Lab # 1(Measuring techniques and calculations)

24th Jan. – Chapter 1 & 2

WEEK THREE

29th Jan. - - Lab # 3 (Separation of the components of the mixture)
Chapter 2 will be completed.

31st Jan. – Chapter 3

WEEK FOUR

5th Feb. – Lab # 4 (Identification of substances by physical properties)
Chapter 3 Cont.

7th Feb. – Chapter 4

WEEK FIVE

12th Feb. – Chapter 4 cont. and Lab # 8

14th Feb. - Chapter 4 and Review chapter 1-4

WEEK SIX

19th Feb. – Holiday

21nd Feb. – Unit Test 1 of chapters 1-4 (Closing of Online Quizzes for chapters 1-4).

WEEK SEVEN

26th Feb. – Chapter 5 and Lab # 9 (Activity Series of Metals)

28th Feb. – Chapter 5

WEEK EIGHT

5th March. – Chapter 6 and Lab # 11 (Heat of Acid - Base Neutralization)

7th March. –Chapter 6

WEEK NINE

12th March. Spring Break

14th March. – Spring Break

WEEK TEN

19th March. –Chapter 7

21st March. –Chapter 8

WEEK ELEVEN

26th March. – Chapter 8 Cont.

28th March. _Review Chapters 5-8

WEEK TWELVE

2nd April. — Test # 2 (Chapters 5-8)
Closing of Online H.W. and Quizzes for chapters 5-8.

4th April. ---Chapter 9

WEEK THIRTEEN

9th April. – Chapter 9 Cont.

11thApril – Chapter 10

WEEK FOURTEEN

16st April. – Lab # 14 and CHAPTER 10

18thApril. – Chapter 11

WEEK FIFTEEN

23rd April. – Chapter 11 & Lab # 13, to determine the molar mass of a volatile liquid.

25th April. –Chapter 12

WEEK SIXTEEN

30th April. – Test 3 Review (Chapters 9-12)

2nd May. – Test # 3 (Chapters 9-12 (Closing day for Online Quizzes and Home work for chapters 9-12)

WEEK SEVENTEEN

7th May. –Final Exam Review

9th May. – Final Exam

Online Homework and Quizzes: Pearsonmastering.com. 10% Extra Credit for unit tests.

- **This is the course overview for CHEM 1411. The instructor reserves the right to make changes to the course overview. Students will be notified in advance of any changes.**
- **Lab reports are due one week after the lab is performed. Lab reports are meant to be worked on individually.**

Other Information

Evaluation for Greater Learning Student Survey System (EGLS3)

"At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term."

TITLE IX OF THE EDUCATION AMENDMENTS OF 1972, 20 U.S.C. A§ 1681 ET. SEQ.

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status-in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504

Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:
Log in to: www.eduriskssolutions.org. Sign in using your HCC student e-mail account, then go to the button at the top right that says **Login** and enter your student number.

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to http://www.hccs.edu/district/students/disability-services/

"At HCC the safety of our students, staff, and faculty is our first priority. As of August 1, 2017, Houston Community College is subject to the Campus Carry Law (SB11 2015). For more information, visit the HCC Campus Carry web page at http://www.hccs.edu/district/departments/police/campus-carry/."

Campus Carry - Houston Community College | HCC

www.hccs.edu

About Campus Carry. During the 84th Texas Legislature, lawmakers passed a law we know as the "Campus Carry" Bill (Senate Bill 11). It allows licensed individuals ...

Essential Needs Statement- Any student who may be facing challenges in affording or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is encouraged to contact the Dean of Students Services for support. Additionally, please notify your professor (me) if you are comfortable in doing so. This will enable me to provide you with guidance on resources that I am aware of relating to essential needs.