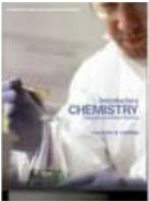
 <p>HOUSTON COMMUNITY COLLEGE</p>	<p>HOUSTON COMMUNITY COLLEGE SOUTHWEST COURSE OUTLINE FOR CHEM 1305 – INTRODUCTORY CHEMISTRY I FALL -2015 Class Number 76314</p>
Discipline/Program	Chemistry
Course Title	Introductory Chemistry I
Course Rubric and Number	CHEM 1305
Semester with Course Reference Number (CRN)	FALL, 2015 CRN 76314
Course Location/Times	Hybrid Course: Eagle Online -Online lecture and exams (except for final exam on campus) Stafford Campus – Scarcella Bldg – Wednesdays 2:00pm – 3:30pm – Room W115 (Lecture review and problem solving)
Course Semester Credit Hours (SCH) (lecture, lab)	3 (3 lecture)
Total Course Contact Hours	24
Course Length (in weeks)	16
Type of Instruction	Hybrid: Lecture online – Review and Problem sessions in class
Instructor contact information (phone number and email address)	Lecture : Mounia Elamrani E-mail: mounia.elamrani@hccs.edu Learning Web: http://learning.swc.hccs.edu/members/mounia.elamrani Other website: http://swc2.hccs.edu/pahlavan/
Course Description: ACGM or WECM	A general introduction to the field of chemistry, with an emphasis on the impact of chemistry in our everyday lives and our environment. Laboratory experiments are designed for hands-on chemistry activities with real life applications. Core curriculum course.
Course Description: HCC Catalog Description	Topics include Introduction to Chemistry, Scientific Measurements, Metric System, Matter and Energy, Models of the Atom, Periodic Table, Language of Chemistry, Chemical Reactions, Mole Concept, Stoichiometry, The Gaseous State, and Chemical Bonding. The laboratory includes appropriate experiments. Prerequisites: MATH 0312
Course Prerequisite(s)	These are stated in the course description in the HCC catalog (quoted just above) and they are stressed again here for emphasis. <i>Lack of satisfactory completion of the course prerequisites are one of the main reasons that cause students to do poorly in chemistry.</i> Basic math and problem solving skills at the level of college algebra are <i>essential</i> . If you are not sure if your prior coursework meets these prerequisites, come and talk to me or to the department chair for advice. With the prerequisites satisfactorily completed (preferably with a grade of B or better), you can be confident that you are well-prepared for this course.
Academic Discipline Program Learning Outcomes	<ol style="list-style-type: none"> 1. To appreciate that chemistry is an interesting and relevant subject. Describe the modern practices of chemistry. 2. Understand the importance of instrumental measurements. Express measurements in metric and English units to gain a practical awareness of metric sizes. 3. Classification of matter, elements in the periodic table and properties of a substance as chemical or physical. 4. Describe models of atoms proposed by different scientists. Calculate atomic mass of an element. Explain the relationship between energy levels in an atom and lines in an emission spectrum. 5. State the original periodic law and the modern periodic law. Predict the physical properties of an element and chemical formula of a compound given the information in the periodic table. 6. Write balanced chemical equations and distinguish different types of chemical reactions. 7. To relate the moles of a substance to the number of particles. Calculate the molar mass, molar volume, chemical formula and percent composition of a compound. 8. To interpret the coefficients in a balanced equation as a mole ratio. Perform mass-mass, volume-volume and mass-volume stoichiometry calculations. 9. Learn properties of gases, variables affecting gas pressure and calculate pressure, volume or temperature of a gas after a change in conditions. 10. Explain how valence electrons create a chemical bond. Formation of different types of chemical bonds. Draw electron dot and structural formula of a molecule. Determine shape of a molecule considering the repulsive

	force of valence electrons.
Course Student Learning Outcomes (SLO)	<ol style="list-style-type: none"> 1. To appreciate that chemistry is an interesting and relevant subject. Describe the modern practices of chemistry. 2. Understand the importance of instrumental measurements. Express measurements in metric and English units to gain a practical awareness of metric sizes. 3. Classification of matter, elements in the periodic table and properties of a substance as chemical or physical. 4. Describe models of atoms proposed by different scientists. Calculate atomic mass of an element. Explain the relationship between energy levels in an atom and lines in an emission spectrum. 5. State the original periodic law and the modern periodic law. Predict the physical properties of an element and chemical formula of a compound given the information in the periodic table. 6. Write balanced chemical equations and distinguish different types of chemical reactions. 7. To interpret the coefficients in a balanced equation as a mole ratio. Perform mass -mass, volume-volume and mass-volume stoichiometry calculations. 8. Learn properties of gases, variables affecting gas pressure and calculate pressure, volume or temperature of a gas after a change in conditions. 9. Explain how valence electrons create a chemical bond. Formation of different types of chemical bonds. Draw electron dot and structural formula of a molecule. Determine shape of a molecule considering the repulsive force of valence electrons.
Learning Objectives (Numbering system linked to SLO)	<ol style="list-style-type: none"> 1.1 To describe the early practice of chemistry. 1.2 To describe the modern practice of chemistry 1.3 To appreciate that chemistry is an interesting and relevant subject. 2.1 To identify typical instruments in a chemistry laboratory and explain why an instrumental measurement is never exact. 2.2 To identify the number of significant digits in a given measurement. 2.3 To round off a given value to a stated number of significant digits. 2.4 To explain the concept of exponents and specifically powers of 10. 2.5 To describe the three steps in the unit analysis method and apply this method of problem solving. 2.6 To explain the concept of percent and apply percent as a unit factor. 3.1 To list the basic units and symbols of the metric system. 3.2 To express a given metric measurement with a different metric prefix 3.3 To describe the technique of determining the volume by displacement. 3.4 To explain the concept of density and perform calculations that relate density to mass and volume 3.5 To state the values for the freezing point and boiling point of water on the Fahrenheit, Celsius and Kelvin scales 4.1 To describe the motion of particles in the solid, liquid, and gaseous states of matter 4.2 To classify a sample of matter as an element, compound, or mixture. 4.3 To distinguish between the properties of metals and nonmetals 4.4 To explain the law of definite composition of a compound. 4.5 To classify a property of a substance as physical or chemical. 4.6 To apply the conservation of mass law to chemical changes. 4.7 To distinguish between potential and kinetic energy. 4.8 To apply the Conservation Of Energy Law to physical and chemical changes. 5;1 To describe the Dalton, Rutherford, and Thompson's models of the atom; 5.2 To explain the concept of relative atomic mass. 5.3 To explain the way nature of light and state the relationship of wavelength, frequency, and energy of light. 5.4 To explain the quantum concept applied to matter and energy. 5.5 To describe the Bohr model of the atom and explain the relationship between energy levels in an atom and lines in an emission spectrum. 5.6 To write the predicted electron configurations for selected elements.

	<p>5.7 To describe the quantum mechanical model of the atom and compare the relative sizes and shapes of “s” and “p” orbitals;</p> <p>6.1 To state the original Periodic Law proposed by Mendeleev and modern Periodic Law proposed by Mosley.</p> <p>6.2 To classify the elements according to their groups and periods in the periodic table.</p> <p>6.3 To describe the trend in atomic size and metallic character within a group or period of elements.</p> <p>6.4 To predict a physical property for an element given the value of other elements in the same group</p> <p>6.5 To predict the number of valence electrons for any representative element</p> <p>6.6 To draw the electron dot formula for any representative element.</p> <p>7.1 To classify a compound as a binary ionic, ternary ionic, or a binary molecular compound.</p> <p>7.2 Write chemical formulas for compounds composed of monoatomic ions and polyatomic ions</p> <p>7.3 To write names and formulas in binary and ternary oxyacids.</p> <p>8.1 To state observation that are evidence for a chemical reaction.</p> <p>8.2 To write balanced chemical equations.</p> <p>8.3 To distinguish five types of chemical reactions</p> <p>8.4 To write a balanced chemical equation for the reaction of an acid and a base.</p> <p>9.1 To state the value of Avogadro’s number</p> <p>9.2 To relate the moles of the substance to the number of particles</p> <p>9.3 To relate the mass of the substance to the number of particles.</p> <p>9.3 To state the value for the molar volume of any gas at STP.</p> <p>9.4 To calculate the percent composition of a compound given its chemical formula</p> <p>10.1 To relate the coefficients in a balanced chemical equation to: A) moles of reactants and products and B) liters of gaseous reactants and products</p> <p>10.2 To relate the number of moles of two substances in a balanced chemical equation</p> <p>11.1 To list properties of a gas</p> <p>11.2 To state standard atmospheric pressure in different units</p> <p>11.3 To identify variables that affect the pressure of a gas</p> <p>11.4 To state whether gas pressure increases or decreases for a given change in volume, temperature, or the number of moles of gas</p> <p>11.5 To explain the concept of vapor pressure</p> <p>12.1 To explain how valence electrons create a chemical bond and formation of different types of chemical bonds</p> <p>12.2 To draw the electron dot formula for a molecule</p> <p>12.3 To determine the shape of a molecule by applying VSEPR Theory</p>
<p>SCANS and/or Core Curriculum Competencies</p>	<p>Reading, Speaking/Listening, Critical Thinking, Computer/Information Literacy</p>
<p>Academic Discipline Program Learning Outcomes</p>	<ol style="list-style-type: none"> 1. To provide the student a basic and practical understanding of chemistry (formulas, reactions, and calculations) and recognize its relevance in our daily lives. 2. To prepare our students to meet with success in higher level chemistry and other science courses when they transfer to four-year universities. 3. To prepare our students for professional programs requiring a mastery of General Chemistry and Organic Chemistry, such as Nursing, Medicine, Dentistry, and Pharmacy. 4. To enhance class lectures with a meaningful, hands-on laboratory experience involving making measurements, observing reactions, evaluating the results and drawing conclusions with the involvement of lab group or other class members.

EGLS3: Evaluation of Greater Learning Student Survey	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.																
Course Calendar	Tentative Course Schedule* <i>DISCLAIMER: The instructor reserves the right to modify this syllabus as needed and will notify the students of any changes using the HCC e-mail or Eagle Online e-mail or announcements in class.</i>																
Student Assignments	Outside of laboratory reports (for the course with lab), special assignments are normally not required. Practice problems, such as those at the end of the chapters, are highly beneficial, indeed essential, to learning chemistry. I recommend that you work as many of the even-numbered end of chapter problems as you can (these have answers in the back of your textbook). Use the practice exams too!																
Student Assessment(s)	<p>The overall score is based on the following:</p> <table border="1" data-bbox="483 867 1494 1003"> <thead> <tr> <th>Assignment</th> <th>Grade Weight</th> </tr> </thead> <tbody> <tr> <td>Graded Quizzes Online (3 QZs)</td> <td>20%</td> </tr> <tr> <td>Lecture Exams (3 EXs)</td> <td>60%Exam</td> </tr> <tr> <td>Final Exam</td> <td>20%</td> </tr> </tbody> </table> <p>The course grade is based on the overall score: $Score = (0.20 * Average\ Quizzes) + (0.60 * Average\ Exams) + (0.20 * Final\ Exam)$</p>	Assignment	Grade Weight	Graded Quizzes Online (3 QZs)	20%	Lecture Exams (3 EXs)	60%Exam	Final Exam	20%								
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HCC Grading Scale	<table border="0" data-bbox="483 1119 1494 1245"> <tr> <td>A = 100 – 90:</td> <td>4 points psh</td> <td>IP (In Progress):</td> <td>0 points psh</td> </tr> <tr> <td>B = 89 – 80:</td> <td>3 points psh</td> <td>W(Withdrawn):</td> <td>0 points psh</td> </tr> <tr> <td>C = 79 – 70:</td> <td>2 points psh</td> <td>I (Incomplete):</td> <td>0 points psh</td> </tr> <tr> <td>D = 69 – 60:</td> <td>1 points psh</td> <td>AUD (Audit):</td> <td>0 points psh</td> </tr> </table> <p>F = 59 and below 0 points psh psh: per semester hour IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses. To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted; The grades “IP,” “OM” and “I” do not affect GPA.</p>	A = 100 – 90:	4 points psh	IP (In Progress):	0 points psh	B = 89 – 80:	3 points psh	W(Withdrawn):	0 points psh	C = 79 – 70:	2 points psh	I (Incomplete):	0 points psh	D = 69 – 60:	1 points psh	AUD (Audit):	0 points psh
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Instructor Grading Criteria	See the above descriptions of the lab, exams, quizzes, and final. The course grade is based on these four criteria according to the Assessment section above.																
Instructional Materials	<p>Textbook</p>  <p>Introductory Chemistry: Concepts and Critical Thinking, by Charles H. Corwin. Seventh Edition, Pearson Prentice Hall, 2013. Custom HCC Softcover Edition ISBN-13: 978-1-269-31320-9</p> <p>Laboratory Manual Online handouts can be accessed and printed from my LearningWeb site at http://learning.hccs.edu/faculty/steven.dessens/steven.dessens/notes_and_practice/chem_1405/</p> <p>Optional Study Guide and Solutions Manual Study Guide & Selected Solutions Manual for Introductory Chemistry: Concepts and Critical</p>																

	<p>Thinking, 7th Edition. Pearson Prentice Hall, 2014. ISBN-13: 978-0-321-80858-5</p> <p>PracticeMaterials LearningWeb: http://learning.hccs.edu/faculty/steven.dessens/notes_and_practice/chem_1305</p> <p>Publisher's CompanionWebsite: http://wps.prenhall.com/esm_corwin_chemistry_4/16/4162/1065587.cw/index.html</p>
Instructor's Requirements	<p>Exams and Make-up Policy A total of four (4) exams will be given, and they all count towards your final grade. The first three exams will be given online during the semester. The final exam is comprehensive, and will be administered on campus at the end of the semester. There is no makeup of any exam under ANY circumstances. If you miss an exam, the final exam grade will replace the missed exam. However, missing more than one exam will result in a score of zero. If you take all first 3 exams, the final exam will replace your lowest exam score if it is higher. Please note:</p> <ol style="list-style-type: none"> 1) All students are required to take the final exam on campus (no student can be exempted) 2) A student who completes the course by taking the final exam cannot receive a "W" in the course. ! "W" can only be received on or before the last date of withdrawal. 3) "Bonus Question" will be given within lecture exams for extra points; 4) No other type of extra-credit work will be given to "bring up your grade". <p>Quizzes There will be three quizzes to take online just before the exams. These will help you assess yourselves before the big tests. They are graded so you do need to do well. There is no make up for the quizzes either.</p>
Program/Discipline Requirements	<p>At the program level, the Chemistry Discipline strives to accomplish the Program Learning Outcomes, Student Learning Outcomes, and Learning Objectives as described above. We desire that you receive a challenging and rewarding experience in your chemistry classes at HCC which will prepare you well for future chemistry and related science courses that you may take in the future.</p>
Instructional Materials	<p>Textbook CHEM 1305: Introductory Chemistry -Concepts and Critical Thinking by Charles H. Corwin Customized HCC edition for CHEM 1305 -Introductory Chemistry I (also used for CHEM 1413 & 1405) -Publisher: Pearson Higher Education -Edition: Sixth -ISBN: 978-0-558-75890-5</p>
HCC Policy Statement: ADA Academic Honesty Student attendance 3-peaters Withdrawal deadline	<p>Access Student Services Policies on their Web site: http://hccs.edu/student-rights</p> <p>Disability Support Services (DSS) "Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the respective college at the beginning of each semester. Faculty are authorized to provide only the accommodations requested by the Disability Support Services Office;" If you have any special needs or disabilities which may affect your ability to succeed in college classes or participate in any college programs or activities, please contact the DSS office for assistance. At Southwest College, contact Dr. Becky Hauri, 713-718-7909. Contact numbers for the other HCC colleges are found in the Annual Schedule of Classes, and more information is posted at the HCC web site at Disability Services.</p> <p>Academic Honesty "Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Disciplinary proceedings may be initiated by the college system against a student accused of scholastic dishonesty. Penalties can include a grade of "0" or "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;" In this class, the penalty for willful cheating on exams is a grade of F in the course. This is the standard policy of the Physical Sciences department at Southwest College.</p>

	<p>Attendance Policy The HCCS attendance policy is stated as follows: “Students are expected to attend classes regularly. Students are responsible for materials covered during their absences, and it is the student's responsibility to consult with instructors for make-up assignments. Class attendance is checked daily by instructors. <i>Although it is the responsibility of the student to drop a course for non-attendance, the instructor has full authority to drop a student for excessive absences. A student may be dropped from a course for excessive absences after the student has accumulated absences in excess of 12.5% of the hours of instruction (including lecture and laboratory time);</i>” If circumstances significantly prevent you from attending classes, please inform me. I realize that sometimes outside circumstances can interfere with school, and I will try to be as accommodating as possible, but please be aware of the attendance policy.</p> <p>Policy Regarding Multiple Repeats of a Course “NOTE: Students who repeat a course three or more times may soon face significant tuition/fee increases at HCC and other Texas public colleges and universities. If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test-taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available;”</p> <p>Last Day for Administrative and Student Withdrawals (See “Important Dates” above) I urge any student who is contemplating withdrawing from the class to see me first! You may be doing better than you think. Either way, I want to be accessible and supportive. I do not believe in "weed out" classes, and I consider you to be much more than just a name or number! Note my office hours above; if you need assistance, I'm here to help.</p> <p>Policy Regarding Withdrawals Students desiring to withdraw from a class must do so by the above withdrawal date by filling out a withdrawal form at the registrar’s office; <i>After this date, instructors can no longer enter a grade of “W” for the course for any reason.</i></p>
<p>Distance Education and/or Continuing Education Policies</p>	<p>Access DE Policies on their Web site: http://de.hccs.edu/Distance_Ed/DE_Home/faculty_resources/PDFs/DE_Syllabus.pdf Access CE Policies on their Web site: http://hccs.edu/CE-student-guidelines</p>
<p>Scoring Rubrics</p>	<p>Regular exams and the final will consist of multiple-choice and show-work questions. These are graded in the standard manner. The regular exams will include extra questions for extra credit, for a total possible score of about 110 points. The lab reports are graded on the basis of completeness, neatness, and the correctness of the calculations tied to the experimental results. The pre-and post-lab questions are also graded. Each report is graded on a 100 points basis.</p>
<p>Sample Assignments</p>	<p>N/A</p>
<p>Sample Instructional Methods/Activities</p>	<p>See the PowerPoints at my Learning Web site for an overview of the content of each chapter: http://learning.hccs.edu/faculty/mounia.elamrani</p>