

COURSE SYLLABUS

Fall 2014

Course Title and Section: Chemistry 201 JKS

IAI#CHM 911

Length of Course: 16 weeks

Credit Hours: 5

Contact Hours: 8 (Lecture-4, Lab-4)

Class Meeting Times: Lect. TTh 1:30-5:20 p.m.

Room: 3831

Lab. TTh 1:30-5:20 p.m.

Room: 3831

INSTRUCTOR: DR. LEAH PAGE

OFFICE: 3850

PHONE: (773) 907-4096

E-MAIL: LPAGE7@CCC.EDU

OFFICE HOURS: MWTTH 12:30 pm –1:30 pm, MW 12:30 am- 3:30 pm

Course Description: Prerequisite: Eligibility for Mathematics 140 or higher and either Grade of C or better in Chemistry 121 or one year of high school chemistry, or consent of department chair. Topics include the periodic table of the elements, atomic structure, basic concepts of quantum theory, bonding, stoichiometry of compounds and reactions, thermochemistry, the gaseous state, basic concepts of the liquid and solid states, solutions, acids and bases. Writing assignments, as appropriate to the discipline, are part of the course.

Required Texts and Materials:

Textbook- Tro, Nivaldo J. Chemistry a Molecular Approach 2nd Custom edition, 2013. Pearson.

ISBN: 9781269411349

Lab Manual- Masteringchemistry.com

Required Materials: Students are required to bring the following materials to every class period: **Text book, lab notebook writing utensil, notebook paper and scientific calculator**

Course Objectives:

1. To become familiar with the philosophy, methodology, and terminology of the scientific method.
2. To become familiar with the physical and chemical properties of common substances.
3. Through laboratory experiments, develop skills in the identification and safe handling of chemical substances.

Student Learning Outcomes:

The student will be able to:

1. Solve quantitative chemistry problems and demonstrate reasoning clearly and completely. Integrate multiple ideas in the problem solving process.

- Describe, explain and model chemical and physical processes at the molecular level in order to explain macroscopic properties.
- Classify matter by its state and bonding behavior using the Periodic Table as a reference.
- Apply important theories such as the Kinetic Molecular Theory of Gases or the Quantum Mechanical Theory of the Atom to the solution of general chemistry problems.
- Perform general chemistry laboratory experiments using standard chemistry glassware and equipment and demonstrate appropriate safety procedures.
- Record, graph, chart and interpret data obtained from experimentation and use that information to correctly identify/analyze assigned unknown substances.

Method of Instruction:

- Two 100 minute lecture periods per week
- Two two hour laboratory period per week
- Presentation by lecture method with student participation and discussion.
- Demonstrations by instructor may be utilized to explain concepts and capture student interest.
- Cooperative learning assignments may be presented.

Grading:

Homework and Quizzes: Homework counts toward your grade and is worth 10 points each set. A homework problem set will be assigned every week through Mastering Chemistry, and will be due one week from the assigned date at midnight (11:59 pm). **There will be NO makeup homework.** There will be a quiz once a week at the beginning of class covering the material from the previous classes. **There will be NO makeup quizzes.**

Laboratory: There will be 10 labs that count toward the grade. The lab report is due at the end of the lab session. No points will be earned unless a prelab is accompanied with the lab report.

Exams: **Each hour exam** is worth 100 points. The final exam is worth 200 points. There will be **FOUR** exams and a comprehensive **FINAL** which will be held during finals week.

Final Exam: A comprehensive exam with coverage of all lecture material will be given during finals week. A general chemistry ACS exam will serve as the class final exam. The final exam is worth 20% of your overall grade. The final exam cannot be dropped.

Tentative Exam Dates:	Exam 1:	Sep. 25 (Th)
(These dates are subject to change)	Exam 2:	Oct. 23 (Th)
	Exam 3:	Nov. 20 (Th)
	Exam 4:	Dec. 4 (Th)
	Final	TBA

College closed on the Following dates: Sept. 1 (M), Nov. 27, 28(Th, F)

Last day to drop the class: November 17, 2014

Estimated Point Distribution:

		Points
Hour Exams	Four 100 pt. exams	400
Homework	Ten 10 point assignments	100
Labs	Ten 10 point labs	200
Quizzes	Ten 10 point quizzes	100
Final	200 point final	<u>200</u>
		1000 points total

Grade Distribution

90% - up = A
80% to 89% = B
70% to 79% = C
60% to 69% = D
Below 60% = F

A= Superior
B=Above Average
C=Average
D=Below Average
F=Failure

Laboratory Information:

You must do your laboratory work at the time assigned for your section. Attendance will be taken. Study the experiment carefully before coming to class so that you don't waste time going through the procedure during the lab. **NO MAKE UP LABS.**

ALWAYS WEAR YOUR SAFETY GLASSES. Failure to wear your safety glasses will lead to dismissal from lab and a lowered grade for that experiment.

WEAR SENSIBLE CLOTHING. If you wear shorts, sandals, or other clothing that is not consistent with safety, you will not be admitted to the laboratory. Wear a lab apron if you have one. Do not perform unauthorized experiments and there is No eating, drinking, or smoking in the lab.

Lab Notebooks:

Bound notebook is required for all labs that will be turned in at the end of the semester. Lab reports will consist of a pre-lab section, in-lab section and a post-lab section. A pre lab is required for all labs and will be checked before you can begin the experiment for that class period.

Pre Labs:

- **Title:** The full title of the experiment should be clearly written on the first page of the lab notebook entry.
- **Introduction:** A brief (three to five sentence) introduction to the experiment should be written at the top of the page. The introduction should state the goals and objectives of the laboratory and describe what data will be collected and how that data will be used to arrive at conclusions at the completion of the laboratory. If hypotheses can be made about the outcome of the experiment beforehand, they should be stated here.
- **Chemicals Table (or Reaction Table):** Make a table of the chemicals (reagents, starting materials, etc.) that will be used during the experiment. List the chemicals and their formula, structure, molar mass and physical state (**if applicable**). If it will be useful to know a reagent's melting point, boiling point, density or other physical property, include that information as well.
- **Calculations & Equations:** Write out all relevant equations with variable definitions that are applicable to the experiment.
- **Anticipated Procedure:** Make a **numbered list** of the tasks that you must complete during the experiment. This list does not have to be exhaustive, but should accurately summarize all aspects of the procedure you are going to complete that day. During the lab, you may deviate from this outline as the requirements change in response to observations that you are making and data that you are collecting.

In-Lab:

- **Observations:** Here, the more details you record, the more complete this sections will be. Use all of your senses—except taste!—when making observations. Make notes about the state of your reagents (e.g., physical state, color, smell) where appropriate, what happens when reagents are mixed (e.g., color changes, gas evolution), and temperature changes. Also, use this section to accurately record data that the manual asks you to collect during the experiment (e.g., masses,

volumes, pH). Be as precise in your measurements as possible.

Post-Lab:

- **Questions:** Most experiments pose questions at the end of the manuscript. These should be answered carefully and completely.
- **Calculations:** If calculations are required using the data that was collected during the experiment, these should be clearly written here. Where applicable, write the full equation being used at the start of each calculation. Show all work for full credit. **Conclusions:** Finally, your post-lab should contain a small paragraph stating the conclusions that you were able to reach during the laboratory experiment. These conclusions should be well supported by the data that you collected and by the calculations that were written in the Calculations section above. In other words, analyze the data; explain how the results of the experiment led you to the stated conclusions. Also, discuss whether any hypotheses that were postulated in the pre-lab section were supported or unsupported.

“No Show” Withdrawal Policy (NSW):

If a student registered for the course before the start time of the first class period, but (a) did not attend the first two classes, or (b) attended only one of the first three classes and (c) failed to notify the instructor of his or her intentions to continue the class, the student will be withdrawn from the course by the instructor and issued an NSW (*Student Policy Manual*, p. 25)

<http://www.ccc.edu/Files/studentpolicymanual.pdf>..

Statement of Active Pursuit of the Course:

ICCB defines “Active Pursuit” as follows, “A student is ‘in attendance at midterm’ if the student is currently enrolled in and actively pursuing completion of the course. Therefore, students are considered to be ‘actively pursuing course completion’ if they are consistently attending the course (per the instructor’s requirements) and completing assignments, quizzes, exams, etc as required by the course syllabus. If the course is delivered online, students are considered to be ‘actively pursuing’ if they consistently log into the course website (per the instructor’s requirements).” For this class, **at the midterm census date, a student will be given an ADW (thus, dropped from the class) for displaying what the instructor deems a lack of interest in successfully completing the course if they meet ALL 3 of the following criteria:**

- (a) A student has not completed three out of the five homework assignments on masteringchemistry.com
- (b) A student has not taken the first exam
- (c) A student has missed a significant number of labs: Defined as 3 or more experiments periods

Academic integrity: Truman College is committed to the ideals of truth and honesty. In view of this, students are expected to adhere to high standards of honesty in their academic endeavor. Plagiarism and cheating of any kind are serious violations of these standards and will result, minimally, in the grade of “F” by the instructor

Student Conduct: Truman College students are expected to conduct themselves in a manner which is considerate of the rights of others and which will not impair the educational mission of the College. Misconduct for which students are subject to College Discipline (e.g. expulsion) may include the following: (1) all forms of dishonesty such as stealing, forgery, (2) obstruction or disruption of teaching, research, administration, disciplinary proceeding, (3) physical or verbal abuse, threats, intimidation, harassment, and/or other conduct that threatens or endangers the health or safety of any person, and (4) carrying or possession of weapons, ammunition or other explosives.

STUDENT SUPPORT SERVICES:

The [Student Services Department](#) provides a broad range of services to assist students in achieving their academic and life goals

Services for Students with Disability Office:

The [Truman College Disability Access Center \(DAC\)](#) verifies needs pursuant to the American Disabilities Act (ADA), determines student academic accommodations, and issues accommodation letters. Phone number: (773) 907-4725. Linda Ford is the director. The DAC is located in Room 1435, Main Bldg..

TRIO Student Support Services

[TRIO](#) is for low-income students, first generation college students, or students with disabilities who need academic support: (773) 907-4797, Room 1435, Main Bldg. Registration is required at the start of each semester..

Tutoring Center

The [tutoring center](#) is located in room 177, Larry McKeon Student Services Building, (773) 907-4785 or (773) 907-4790.

TOPICAL OUTLINE

Week	Topic	Unit Section
1	Measurements	1
2	Atoms and Elements	2
3	Molecules, Compounds...	3
4	Chemical Quantities Aqueous Solutions	4
5	Gases	5
6	Thermochemistry	6
7	The Quantum Mechanical Model	7
8	Periodic Properties of the Elements	8
9	Chemical Bonding I	9
10	Chemical Bonding II	10
11	Liquids,Solids, Intermolecular	11
12	Solutions	12
13	Solutions	13
14	Review	14

CHM 201 –General Chemistry I

<i>Week</i>	<i>Laboratory Experiment</i>
1	Check In and safety lecture
2	Exp. 1 – Simple Qualitative Analysis
3	Exp. 2 – Single and Double Displacement Reactions
4	Exp. 3 – Qualitative Analysis
5	Exp. 4– Some Nonmetals and their Components
6	Exp. 5 – The Alkaline Earths and the Halogens
7	Exp. 6 – Molar Mass of a Volatile Compound
8	Exp. 7 – Introduction to Thermodynamics
9	Exp. 8 – Stoichiometric Determination of Copper II
10	Exp. 9 – Molecular Geometry