

WEST LOS ANGELES COLLEGE

CHEMISTRY 51 FALL 2015 SECTION 3490

INSTRUCTOR: VU P. BUI, PhD

Lecture: 5:10 pm – 6:35 pm Tues & Thurs MSA-003
Conference: 6:45 pm – 7:50 pm Tues MSA-003
Lab: 6:45 pm – 10:00 pm Thurs MSA-402

OFFICE HOURS: 7:50pm-9:00 pm Tues and by appointment

CONTACT: buivp@wlaac.edu

If you need help or have any concern, the best way is to discuss with me in person immediately.

PREREQUISITE: College Algebra (Math 115 or higher)

COURSE DESCRIPTION This is an introductory one-semester course in college chemistry. Topics covered include general, organic, and biological chemistry. Physical and chemical discoveries that provide some insight into the chemical sciences are presented. Basic atomic theory, nomenclature, molecular structure, chemical reactions and the behavior of gases are also some of the topics covered. The laboratory exercises for this course emphasize basic laboratory skills, fundamental chemical principles, and elementary qualitative and quantitative relationships in chemical analyses.

TEXT K. C. Timberlake, *Chemistry, An Introductory to General, Organic, and Biological Chemistry*, 11th Edition, Pearson Education Inc., 2015.

LAB. MANUAL: *Essential Lab Manual for Chemistry, Organic & Biological Chemistry, 2nd Edition* by Karen Timberlake

SUPPLEMENTARY PACKAGE

- A.** K. C. Timberlake, *Study Guide*. It is designed to promote active learning through a variety of exercises with answers as well as mastery exams. It thus provides you a means of self-evaluation in determining how well you understand the materials of each chapter.
- B.** K. C. Timberlake, *Solutions Guide* for text. Provides detailed solutions to all even-numbered exercises. It can be helpful IF you look at the solutions only AFTER you try the exercises by yourself.

The assigned readings and suggested exercises (see syllabus and lecture schedule) are designed to cover most of the important concepts presented in this course, and their applications. You will find that you need to practice on more exercises than are given on the “**suggested**” list in order to gain acceptable mastery of the material. There is no substitute for a determined and perhaps lengthy effort to work out a problem on your own. You should not seek help until you have done at least some work on the exercise yourself.

STUDENT LEARNING OUTCOMES

As a result of taking this course you will demonstrate a firm understanding of:

- measurement in both the English and metric systems.
- general, inorganic and introductory organic chemistry, including nomenclature and writing formulas and chemical equations.
- basic atomic theory and apply its principles to chemical reactions
- reactions of acids/bases, redox, as well as reaction of gases, liquids, and solids in conjunction with one another.
- functional group categories that differentiate the various organic chemicals and the physical, chemical and physiological properties of each.

EXAMINATIONS AND GRADING There will be **THREE** midterm examinations and **SIX** quizzes during the semester. Each midterm exam will be worth **100 points**. The quizzes, in the aggregate, will be worth **200 points**. You will be allowed to drop the two lowest quiz scores. A **COMPREHENSIVE FINAL EXAMINATION**, will be worth **300 points**. One **quiz worth 50 points**, will be given on the 13th week from experimental work carried out in the laboratory. The total **lab grade** will be worth **200 points**. Thus, total points for the course will be **1000**. The exams will primarily consist of some combination of multiple choice, fill-in, drawing, computation, and short answer questions. All students are responsible for taking all exams. You will be expected to provide your own **SCAN-TRON # 882-ES** answer sheets and a No. 2 soft lead pencil for all exams.

MISSED EXAM All exams must be taken on the scheduled day and time. No make up exams will be given for any reason if you miss a quiz or an exam. If the student misses one midterm exam, for an excused absence with a **proper documentation**, the **lowest percentage** exam score **from all the other exams** given during the semester (including the final) will be used as the score for the missed exam. A **second missed exam** will be given a score of **zero** for that exam. You will be given a week to submit the documentation (hospital, funeral, accident). If the student is (excused) for the final exam, he/she will be given an incomplete, as long as the student is passing the class. The incomplete can be made-up by taking the final within a year. Since the student will have extra time, **10% of the final value** will be subtracted from the student's score.

After all points awarded to you in the course are totaled, the **final letter grades** will be assigned according to the following percentages:

>88-	A
77-87	B
65-76	C
54-64	D
<54	F

***However, at the end of the Semester the scale maybe adjusted downward!**

CLASSROOM ETIQUETTE It is very simple! Get to class on time, every time and stay the whole time. In the event that you are more than ten minutes late, stay out the whole period. Disrupting the class while lecture is in progress is unacceptable.

Furthermore, while lecture is in progress should you, for any reason leave the class room; you are not to come back. It is absolutely unacceptable to disrupt the class by being in-and-out of the classroom during the lecture. Bathroom runs should be taken care of prior to coming to class. You might wish to control your liquid in-take in accordance to class duration.

No cell phones and pagers should be activated. They are very disruptive! If you are expecting a 'very important, i. e. more important than being in class, phone call', then by all means stay home and wait for it! Surely, we all have loved ones we want to engage in a conversation over the phone. I am certain family members and friends can wait for the calls for 75-90 minutes, particularly you if have informed them that you will be in class during such and such time. Common courtesy dictates that a beeper or a ringing cell phone should not disrupt the classroom. Should that happen, you will be asked to leave the classroom; and there will be a-three-way conference that includes the Dean of academic affairs, and me (the instructor) before you are allowed to return to the classroom.

Detailed version of Standards of Student Conduct is published in the Schedule of Classes. The WLAC Science Division has also adopted the following Policy on Student Conduct in the Classroom:

1. Be honest and ethical: follow the rules described in the colleges' policy on academic honesty.
2. Arrive before the start of class: wait until the previous class has been dismissed before entering the classroom.
3. Whenever you arrive to class late, open the door quietly, enter quietly, close the door quietly so as not to disturb the class in session. Then take a seat near the door, on the side or at the back of the classroom. Never walk in **front** of the instructor .
4. Do not eat or drink beverages in the classroom.
5. No gum chewing.
6. Sharpen pencils before class starts. Do not sharpen pencils during the lecture.
7. Listen carefully when directions and announcements are given. You are responsible for all information announced whether or not you are absent, tardy or not paying attention.
8. Turn off or mute cell phones before entering the classroom.
9. Do not answer cell phones during class.
10. Do not leave the classroom during the lecture. Wait until the class dismissed.
11. No talking during lecture. Do not chat with your classmates at anytime during lecture, including during time your instructor is putting information on the chalkboard.
12. Raise your hand and wait for recognition by the instructor to ask a question during lecture.
13. During class, do not interrupt the instructor with personal questions. Wait until the class has been dismissed.

EXAMINATION ETIQUETTE

- 1. Seating** Please sit on every other seat within a row, one behind the other up the rows. Left-handers and right-handers should not face each other. Leave first two rows empty (these will be used for last minute arrivals or problems).
- 2. Storage** Only pens/pencils/erasers should be visible and in lap. **DO NOT** use the adjacent desk to store any items (including writing items, clocks, watches, etc). You will be asked to store any unnecessary items and put necessary ones in your lap.
- 3. Start time** All exams will be passed out before anyone begins. As soon as you get your exam, please put your name and ID on the front. You will NOT be given time to do that as exams are being picked up. When everyone has an exam, an announcement will be made to start. Please be sure that your eyes are on your paper, closed, looking at the ceiling or reading board announcements. You will be asked to move to another location if you have a problem controlling your eye movements and do not stop upon first request.
- 4. NO's List** This list will be enforced during exams: **no additional time** if you arrive late; **no fancy calculators; no beepers or cell phones**; no food or drink; no hats of any kind; no hair dangling to cover eyes; no "scratch" paper; and **no BATHROOM RUNS!**
- 5. Questions during Exam:** If you have a question, please raise your hand and a proctor or I will come by. Please keep your exam down and we will come to your seat. (Apologies to those we might have to walk past). Check the front board now and then to see if any information has been put there, as this might answer your question.
- 6. Picking up Exams:** Please stay seated the **last FIVE minutes** even if you are finished with your exam, (remember to keep your eyes from roving). You will be informed when there are **FIVE** minutes and then **ONE**-minute left. When **STOP** is announced, you are to **immediately stop** all writing and pass your exam to the nearest aisle. **PLEASE REMAIN SEATED.** You will have 20 seconds to get the exams to the nearest aisle. They will be collected immediately and any exam turned in after that will be late and points will be deducted automatically (no excuses). Please watch your own exam as it goes to the aisle and gets put into the **pickup box**. Remember that your personal cooperation assures the fairness and security of examinations.

ATTENDANCE POLICY Roll will be taken. There is a strong correlation between poor attendance and poor grades. **You are responsible for information, exam announcements, date changes; etc. presented in class, whether or not you are present.** Students who are absent for 3 consecutive class meetings or 6 class meetings throughout the course without informing the instructor with a valid excuse will be dropped.

According to administration **regulation E13**, attendance is mandatory. "Whenever absences (in hours) exceed the number of hours the class meets per week, the instructor will consider whether there are mitigating circumstances which justify the absences. If the instructor determines that such circumstances do not exist, the instructor shall exclude the student from class."

WITHDRAWAL FROM CLASS: You are responsible for your credit and enrollment status. Any student withdrawing from class must inform the admissions office of this decision. **Last day to drop the class with a refund/no fee owed is Sept 6. Students failing to follow the correct procedure for withdrawals will receive a grade of "F" for the semester. Last day to drop the class without a "W" is Friday Sept. 6. Last day to drop a class with W is Nov. 15**

CHEATING/ACADEMIC DISHONESTY: Each student is expected to do his/her own work on all assignments, lab write-ups, examinations, etc. What follows is a **WLAC Policy on Student Academic Honesty** (Adopted by the WLAC Academic Senate June 2006).

West Los Angeles College is committed to preparing students to compete confidently and effectively in a rapidly changing, information-driven, technological global community. Students are expected to be honest and ethical. No acceptable rationale for dishonesty can be based on physical, emotional or learning challenges. The college expects that

students do their own academic work. Acceptable academic conduct does not include cheating, plagiarism or any other unethical academic behavior.

It is the student's responsibility to know what conduct is academically honest.

Original Critical Thinking

A student is expected to work independently. Written assignments and/or projects are to be individually accomplished unless there are specific instructions to work with another student or group of students.

Citing Others' Intellectual Work

Properly credit all sources of information using appropriate citation(s).

The following list includes some examples of academic dishonesty:

Plagiarism

- Submitting someone else's scholarly work, such as essays or term papers, as your own.
- Submitting someone else's artistic work as your own. (examples include musical compositions, computer programs, photographs, paintings, drawings)
- Copying, in part or in full, someone else's assignment.
- Including in your work without proper citation the ideas or language of another author.
- Including in your work without proper citation information downloaded from the Internet.

Test-taking

A student is expected to mentally isolate him/herself while taking quizzes and examinations. All responses will be based upon studied and memorized information, unless specifically instructed to use reference materials and/or specified notes.

The following list includes some examples of academic dishonesty:

Cheating

- Consulting concealed notes during a quiz, test or exam.
- Using unauthorized prepared materials during a quiz, test or exam.
- Receiving information or answers from another individual during a quiz, test or exam.
- Copying information or answers from a classmate's paper.

- Using electronic devices that have not been authorized by the instructor during a quiz, test or exam.
- Inventing data for a laboratory experiment or case study.
- Submitting work prepared previously for another course.
- Talking during a quiz, test, or exam.

Other examples of academic dishonesty:

- Providing your work for someone else to copy.
- Allowing a fellow student to use answers on your paper during a quiz, test or exam.
- Passing information to a fellow student during a quiz, test or exam.
- Purposely allowing a classmate to copy your original work product, such as answers to assignments, lab reports, term papers, etc.
- Stealing tests or examinations.
- Removing tests or exams from a campus facility without the permission of the instructor.

Violators of the WLAC Policy on Student Academic Honesty are subject to disciplinary action. Depending upon the seriousness of the violation, the disciplinary action may be any or all of the following:

- The instructor may warn the student that the conduct is a violation of the WLAC Policy on Student Academic Honesty.
- The instructor may give a zero score or an “F” grade for the assignment or exam. In the case of assignments which are not averaged into the course grade (such as extra credit assignments) the penalty may be the subtraction of the points the assignment is worth.
- The instructor may report in writing the academic dishonesty incident to the Office of Student Services to be placed in the student’s disciplinary file.

The instructor may send a written report to the Office of Student Services about the student’s violation of the Standards of Student Conduct (LACCD Board Rule 9803.12), and request that the college initiate disciplinary action leading to the suspension of the student from the college or the expulsion of the student from the college and the entire district as authorized by LACCD Board Rule 91101.11b. In all instances, the student has the right of due process when charged with a violation of the Standards of Student Conduct. Details of the Student Grievance Procedure may be found in the West Los Angeles College catalog and in the Schedule of Classes in the section on student conduct.

RECOMMENDATIONS FOR SUCCEEDING IN CLASS: **1. Expect to Work:** Chemistry is not supposed to be an easy subject! **2. Class attendance:** Be in class on time, every time, and stay the whole time. **Never miss class!** **3. Study & Review:** You must do so each night the class is given. Spend 3 hours studying for each 1-hour you spend in class. Prepare a written outline of each chapter. Use associations to help you remember things. **4. Exam Preparation:** Begin preparing for your exams at least 1 week in advance. Review and go over every sample problem worked out in your text. **5. Tutorial:** If you need a tutor, get one early on; hiring one at the eleventh hour would be a waste of your time and money! On campus, the HLRC does provide free tutorial services. They have very competent chemistry tutors. **6. External Resources:** Visit a **website** at Chemistry Place, specifically tailored for your text at www.aw-bc.com/chemplace. This website offers comprehensive and interactive teaching and learning resources, thus transforming the web into an extension of your classroom. There is a wealth of information that would further enhance our chemical information database. You can discover new learning activities created by innovative educators. Chemistry Place is designed as a first stop for Internet navigators searching for chemistry related information. It is the bookmark for anybody with a question about the vast world of chemistry. As a WLAC student you can access the Internet from our library and through the Data Center. In the near future, we also expect to have our chemistry laboratories and classrooms to be wired to the Internet.

ADA STATEMENT: WLAC offers services and/or accommodations for learning disabled students, as mandated by the Americans with Disabilities Act (ADA). If you are a student with disability and require classroom accommodations, please meet with me to discuss arrangement. You are also encouraged to contact the Office of Disabled Student Programs and Services (DSPS&S) as soon as possible to meet with a DSPS counselor. DSPS is located in the Heldman Learning Resources Center (HLRC), Room 119. The office is open Monday through Thursday, 8:00 AM to 6:00 PM and (9:00 AM to 3:00 PM on Fridays. Evening appointments can be made by special arrangement . The telephone number is 310-287-4450.

TENTATIVE LECTURE SCHEDULE

Weeks/Date EXERCISES:

SUGGESTED

1.	Sep.1-Sep.3	CHAPTER 1	Measurements and Calculations	Even numbered. problems in every Chapter.
2.	Sept.08 Sept 10	CHAPTER 1 cont'd CHAPTER 2		
3.	Sept. 15-17	QUIZ # 1	(Chap. 1 & 2 (Temp only))	
		CHAPTER 3	Atoms and Elements. Memorize selected symbols of elements from Periodic Table, Ions(Table6.5/page (174)	
4.	Sept. 22-24	CHAPTER 3 CHAPTER 4	Cont'd Compounds & Bonds	Memorize names of polyatomic ions Table 6.7/page178

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| 5. | Sept. 29
Oct 1 | Quiz # 2 (Chapter 3), CHAPTER 4 cont'd |
| 6. | Oct 6-8, | FIRST MIDTERM EXAMINATION(Chap.1,2,3,4)

CHAPTER 5 Chemical Quantities And Chem. Reactions |
| 7. | Oct 13-15 | CHAPTER 5 Cont'd
CHAPTER 7 Solutions |
| 8.. | Oct 20-22 | CHAPTER 7 cont'd

QUIZ # 3 (Chap.5) |
| 9. | Oct 27-29 | CHAPTER 8 Acids & Bases

CHAPTER 2 Energy and Matter
<i>Sections 1, 2, 4, 5 and 6</i> |
| 10. | Nov. 03-5 | SECOND MIDTERM EXAM (Chap 3,5,8)
CHAPTER 6 Gases, |
| 11 | Nov. 10-12 | CHAPTER 6 Contd |
| 12. | Nov. 17-19 | CHAPTER 10 Introduction to Org. Chem
Quiz #5(Chap. 6, 10) |
| 13. | Nov. 24 | CHAPTER 10 Cont'd
CHAPTER 12 Organic Compounds with Oxygen and Sulfur
QUIZ # 6 (Chapter 10, 12) |
| | Nov. 26 | THANKSGIVING DAY , No class |
| 14. | Dec. 1-3 | CHAPTER 14 Carboxylic acids , Esters, Amines, Amides

CHAPTER 13 Carbohydrates

CHAPTER 15 Lipids
CHAPTER 16 Amino acids, Proteins, Enzymes

CHAPTER 17 Nucleic acids, Protein Syntheses |
| 15. | Dec. 08
Dec. 10 | MIDTERM # 3 Chapters 10,12,13,14
REVIEW ALL CHAPTERS FOR THE FINAL |
| 16. | Dec. 15 | FINAL EXAM (all chapters) |

TENTATIVE

LABORATORY SCHEDULE

Lab. Manual: Essential *Laboratory Manual for Chemistry, Organic, and Biological Chemistry*. Karen Timberlake, Second Edition.

Thursday class, please add one to the scheduled date.

GOGGLES ARE REQUIRED

<u>Week/Date</u>	<u>Laboratory Experiment</u>
1. Sept. 3	Check in Laboratory Safety: a. Watch a Video b. Laboratory Preparation c. Safe Handling of Chemicals d. Heating of Chemicals Safely, e. Waste Disposal f. Laboratory Equipment
2. Sept 10	Lab.1 Lab D-1 Measurements & Sig. Figures, p-9 Conv. Factors in Calculations, D-11-19
3. Sept 17	Lab. 2 Lab. 3 Density and Specific Gravity, p-15-23 Atomic Structure, p-28-39
4. Sept 24	Lab D-2 Compounds & Their Formulas, D-25-34
5. Oc. 1	Lab 6 Handout I Moles & Chemical Formulas Nomenclature- Do all
6. Oct 08	Handout 2 Lab.5 Balancing Chemical Reactions, Do even number only Chemical Reaction & Equations p-55-66
7. Oct 15	Lab.10 Solutions, A, C
8. Oct 22	Lab. 13 Acid and Bases, pH, Titration of vinegar . Std base will be provided by stockroom
9. Oct. 29	Handout 3 Preparation and standardization of NaOH Titration of HCl
10. Nov.05	Lab.8 Lab. 7 Gas Law. Answer Q.5,6,7 Video-1-page report required Cal. values of Food. (Bring food wrappers with caloric values)
11. Nov. 12	Lab D-3 Properties & Structure of Alkanes, D 35-42 A, B, C, D, E, F
12. Nov. 19	Lab 14 Alcohol, Aldehyde, Ketone, A,B,C,2,D,Q1,Q2,Q3, D(do B1,B2,B3 On page 198) D,E,F DISPOSE WASTE INTO A FLASK UNDER THE HOOD.
13. Nov. 26	Thanksgiving Holiday.
14. Dec. 3	Lab. 15 Carboxylic Acids & Esters A1.-6,(instructions), Answer Q1,2,3 B. Omit Aspirin. DISPOSE WASTE INTO A FLASK UNDER THE HOOD

15. Dec. 10 Lab. 16 Carbohydrates A , D, E, H, Omit B,C Answer Q 6,7,9,11,12
DISPOSE WASTE INTO A FLASK UNDER THE HOOD.

CHECK OUT

SOME PERTINENT NOTES ON LABORATORY WORK

ABSENCES: There will be **NO MAKE-UP LABS!** A grade of **Zero** will be given for a missed lab session .

LAB REPORTS: In general, a lab report must include the following:

A. The answers to the pre-Lab questions: Each experiment in the manual is preceded by a prelaboratory assignment. This assignment has to be completed prior to your coming to the laboratory. The questions in this section are designed to assist you in the performance of the actual experiment. As part of your, lab report the prelab assignments must be discussed and turned-in prior to performing the particular experiment. **Every student must purchase the required Laboratory Manual.**

B. Experimental Results/Observations: Make a practice of recording experimental events and data as they occur. Attempts will be made to do preliminary evaluation of your lab work during the laboratory sessions. To the extent possible, time permitting, you must try to complete (collection and analysis of experimental data) on the same day you perform the experiment, and submit it for evaluation along with the pre-lab exercises. Otherwise, a lab report is due at **the beginning of the next lab period**. Late lab reports will be severely punished. They will not be accepted if they are **late** more than **two lab periods**.

C. The answers to post-lab questions: Only selective questions will be assigned; but those that have been, should be given some thought in answering them as they are designed to further advance understanding of the underlying chemical principles involved in the experiment. This part of your work is to be submitted with Part B.