



Science Division Chemistry 51 (Section 0490) Winter Intersession 2015

Class Hours:	Lecture	MTWTHF	1:30 pm - 2:55 pm	Location:	MSA 003
	Conference	MTWTHF	3:05 pm - 4:10 pm	Location:	MSA 003
	Laboratory	MTWTH	4:20 pm - 6:55 pm	Location:	MSA 402

Lec/Conf Instructor: *Dr. Abraha Bahta*
Location: MSB 231/233
Phone: 287-4236/7222
Office Hours: 11:00 AM -12:00 NOON (M-TH), and by Appointment
E-mail: bahtaa@wlaac.edu

Laboratory Instructor: Professor Othelia Garcia
Location: MSB 211
Phone: 287-4270
Office Hours: Immediately following class and by appointment
E-mail:

Welcome: This course assumes that you have no background on the discipline of chemistry. Therefore, there are no required prerequisites for it. During this 2015 Winter Intersession, you will work to develop your scientific writing, reading, chemical vocabulary and critical thinking skills so as to be successful in completing the course. You will also learn to evaluate chemical information. Specifically, you will apply appropriate scientific methodologies to carry out assigned tasks be they in the laboratory classroom or outside.

The skills you learn here will help you succeed in and outside the class room. However, your education is ultimately YOUR responsibility. YOU determine your level of success. The successful college student is self-motivated and understands the importance of studying the material, comes to class prepared and practices skills learned. YOU CAN DO IT and Science Division and its staff are here to support your efforts.

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.

This course description can be found on the Electronic Curriculum Development (ECD) System found at <https://ecd.laccd.edu/>. Once you click on "find a course" you will be able to see the official Course Outline of Record.

REQUIRED TEXTS

LECTURE K. C. Timberlake, *An Introductory to General, Organic, and Biological Chemistry*, 11th Edition, Prentice Hall, 2012.

LAB MANUAL K.C. Timberlake, *Essential Laboratory Manual for General, Organic, and Biological Chemistry*, Second Edition.

OPTIONAL SUPPLEMENTARY MATERIALS

K. C. Timberlake, ***Study Guide*** for text. It provides you with a means of self-evaluation in determining how well you understand the materials of each chapter.

K. C. Timberlake, ***Solutions Guide*** for text. It provides you 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.

COURSE STUDENT LEARNING OUTCOMES (SLOs):

Upon successful completion of this course you will be able to demonstrate a firm understanding of:

- measurements 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 reactions 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

Course SLOs are located on the West Los Angeles College SLO website. Please visit http://www.wlac.edu/slo/course_slos.html; be sure to bookmark it for future reference. Follow the link on the page to the course SLO listing. Locate Science Division on the tabs at the bottom of the window. Click on the tab and locate your course. Besides the CSLOs (Course Student Learning Outcomes), included, for your reference, are also the ISLOs (Institutional Student Learning Outcomes) and the PSLOs (Program Student Learning Outcomes).

Program SLOs

1. Utilize an appropriate and effective scientific methodology to analyze physical and chemical processes in the workplace and in everyday living.
2. Explain and analyze the chemical world—as chemistry is a basic science with connections to many careers.
3. Research and interpret scientific literature.

Institutional SLOs

A. Critical Thinking: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.

B. Communication: Effectively communicate thought in a clear, well-organized manner to persuade, inform, and convey ideas in academic, work, family and community settings.

C. Quantitative Reasoning: Identify, analyze, and solve problems that are quantitative in nature.

D. Self-awareness/Interpersonal Skills: Apply self-assessment and reflection strategies to interpersonal, work, community, career, and educational pathways.

F. Technical Competence: Utilize the appropriate technology effectively for informational, academic, personal, and professional needs.

H. Ethics: Practice and demonstrate standards of personal and professional integrity, honesty and fairness; apply ethical principles in submission of all college work.

EVALUATION AND GRADING GUIDELINES

To ensure that you are keeping up with the readings, and as a means of re-enforcing learning of the lecture and lab materials, various forms of evaluations are employed:

- In-class Drills
- Midterm Exams
- Comprehensive Final Exam

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 SCAN-TRON # 882-ES answer sheets and a No. 2 soft lead pencil. All exams must be taken on the scheduled day and time. No make-up exams will be given for any reason. If a student misses midterm exam, for an excused absence with **a proper documentation**, the **lowest percentage** exam score from **all the other exams** given during the intersession (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. If a student is absent (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.

The course will be allotted **1000 POINTS**. The chart below will serve as a guideline on how all points awarded to you in the course are allocated and the **final letter grades** will be assigned according to the percentages shown in the chart.

Assignment Category	# of Assign.	Points Per Assignment	Total Points	% of Total Grade
In-class Drills	Almost daily Except Mondays	Variant	130	13%
Mid-Term	4	80	320	32%
Laboratory Reports	12-15	Variant**	200	20%
Final	1	300	350	35%
Grand Total	-	-	1000	100%
880 - 1000 = A	770 - 879 = B	6500 - 769 = C	540 - 649 = D	539 and below = F

** Separate Laboratory Scoring Guide document will be distributed to you by your Lab Instructor.

CLASS POLICIES

Attendance

Because class discussions and conference drills are an integral part of this course, attendance is mandatory. Up to 3 absences are allowed. After that, you could be dropped. Students are expected to attend every class meeting, to arrive on time and stay throughout the class period; **furthermore**, 3 tardies = 1 absence. Thus, students **may be dropped** from class for a variety of reasons: **3 absences**, **excessive tardiness**, (or a combination of absences and tardiness that add to 3 absences), and **a no show during the first day of class**.

Preparedness

You are expected to arrive on time. You will come to each class session prepared. Bring your books, notebooks, handouts, pens/pencils, and any work that may be due.

Contacting Me

E-mail is the best and quickest way to contact me. Thanks to modern technology, my e-mail is linked to my phone. **If you have a problem, do not let it snowball. Contact me immediately.** I expect you **to ask questions: in the classroom, during office hours and if necessary via email.**

Recording Devices

State law in California prohibits the use of any electronic listening or recording device in a classroom without prior consent of the instructor and college administration. Any student who needs to use electronic aids must secure my consent. If granted, a notice of consent shall be forwarded to the Vice President of Academic Affairs for approval (WLAC College Catalog). A link to the Catalog is provided: http://www.wlac.edu/academics/pdf/WLAC_12-14Catalog_Policies.pdf

CAMPUS RESOURCES

If you are having problems, don't let them snowball. Besides coming to talk with me, please check out some of the campus resources available to you:

Office of Disabled Student Programs and Services (DSP&S)

Student Services Building (SSB) 320, tel (310) 287-4450.

West Los Angeles College recognizes and welcomes its responsibility to provide an equal educational opportunity to all disabled individuals. The Office of Disabled Students Programs and Services (DSP&S) has been established to provide support services for all verified disabled students pursuing a college education. DSP&S students may qualify for: priority registration, registration assistance, special parking permits, sign language interpreters and assistive technology (WLAC College Catalog).

Instructional Support (Tutoring) & Learning Skills Center

Heldman Learning Resources Center (HLRC) | (310) 287-4486

Improve your reading, language, vocabulary, spelling, math fundamentals and chemistry knowledge with convenient, self-paced computer-aided courses in the Learning Skills Center. Increase your knowledge and learning success: sign up for tutoring in various college subjects (WLAC College Catalog).

Library Services

Heldman Learning Resources Center (HLRC) | (310) 287-4269 & (310) 287-4486

The WLAC Library provides instruction on how to use the online catalog, periodical and research databases. In addition to a large collection of books, periodicals and videos, the WLAC Library has

course textbooks which students may use while in the Library. Web access is available in LIRL as well as meeting rooms. The upper floors provide a beautiful view ideal for study (WLAC College Catalog).

COLLEGE POLICIES

Academic Integrity

Each student is expected to do his/her own work on all assignments, lab write-ups, examinations, etc. This is the narrative on **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 to do their own academic work. Students are expected to mentally isolate themselves while taking quizzes and examinations. All responses ought to be based upon studied and memorized information, unless specifically instructed to use reference materials and/or specified notes.

Acceptable academic conduct does not include cheating, plagiarism or any other unethical academic behavior. It is the students' responsibility to know what conduct is academically honest. 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.

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.

CLASSROOM ETIQUETTE AND CONDUCT

It is very simple! Get to class on time, every time and stay the whole time. When you arrive to class, make sure you have used the restroom, had a chance to eat, check your messages, etc. Walking in and out is rude and disruptive. If you need to leave early, or have some other problem, you need to notify me in advance. 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 classroom; 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. [If a **medical condition** exists that mandates the you to go to the bathroom frequently, the you need to discuss the situation with me privately.]

Cell Phones, iPods, etc.

Turn them off and put them away when class begins! Although it may not seem possible, you can survive without talking and texting on your cell phone, or listening to your iPod for 75-90 minutes. Talking and texting on cell phones not only distract you, but they are a distraction for me and your peers. If you are expecting a ‘very important, i. e. more important than being in class, phone call’, then by all means stay away from class 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. According to District code 9803.15, disruption of classes or college activities is prohibited and will not be tolerated. 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.

The WLAC Science Division has also adopted the following Policy on Student Conduct in Classroom:

1. Be honest and ethical; follow the rules described in the college's 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*, and 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 lecture.
7. Listen carefully when directions and announcements are being given. You are responsible for all information announced whether or not you were 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 is dismissed.
11. No talking during lecture. Do not chat with your classmates at any time during lecture, including during the 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 the class, do not interrupt the instructor with personal questions. Wait until the class has been dismissed.

Refer to the WLAC Catalog and the Standards of Student Conduct in the Schedule of Classes (published every semester) for more information

LECTURE AND LABORATORY SYLLABUS

Week	Date	Course topics	Assignment, Suggested Readings, Schedules for Drills and Exams
FIRST WEEK			
1	Lecture (M-F) Jan 5-9	<ul style="list-style-type: none"> • Welcome & introduction • Review syllabus and course policies • <p>Chapter 1 Measurements</p> <ul style="list-style-type: none"> • Units of Measurement • Scientific Notation • Measured and Exact Numbers; • significant figures • Figures in Calculations • Prefixes and Equalities • Writing Conversion Factors • Problem Solving and Dimensional Analysis <p>Chapter 2 Matter and Energy</p> <ul style="list-style-type: none"> • Temperature conversions <p>Chapter 3 Atoms and Elements</p> <ul style="list-style-type: none"> • Elements and Symbols • The Periodic Table • The Atom: atomic Number, Mass Number, and Atomic Mass • Energy Levels and Electronic Configurations • Trends in Periodic Properties 	<p><u>WEEKLY EVENTS</u></p> <p>Purchase of Text and Lab manual</p> <p>PP 11 Problems 9-95 (odd)</p> <p>PP 60 Problems 21-26</p> <p>PP 88 1-104 (odd)</p> <p>DRILLS: at 3:45 pm</p>
	Lab (M-TH) Jan 5-8	<p><u>Laboratory Work and Review Sessions</u></p> <ul style="list-style-type: none"> • Safety video and Check in • Lab 1 Measurement and significant Figures • Lab D-1 Conversion factors in Calculations • Lab 2 density and Specific Gravity 	<p>PP 9 D-11-19 PP 15-23</p>
SECOND WEEK			
	M-F Jan 12-16	<p>Chapter 4 Compounds and Their Bonds</p> <ul style="list-style-type: none"> • Types: Binary and Polyatomic Compounds • Binary: Ionic and covalent Compounds • Nomenclature: naming and Writing formulas of compounds and ions • Electronegativity and Bond Polarity <p>Chapter 5 Chemical Quantities and Reactions (5.1-5.7)</p> <ul style="list-style-type: none"> • Atomic Masses, Molar Masses and the Mole • Representing Chemical Reactions with Equations • Balancing Chemical reactions • Types of chemical Reactions • Use of Mass-Mole ratios for stoichiometric calculations in chemical reactions <p>Chapter 7 Solutions</p> <ul style="list-style-type: none"> • Atomic Masses, Molar Masses and the Mole • Definition of: solute, solvent, solution and solubility • Solute and solvent types • Water as a universal solvent • Types of solutions: <ul style="list-style-type: none"> Strong Electrolytes (Complete Ionization) Weak Electrolytes (partial Ionization) Non-Electrolytes • Describing Solution Concentrations: <ul style="list-style-type: none"> • Mass Percent (m/m), Volume Percent (v/v) and 	<p><u>WEEKLY EVENTS</u></p> <p>EXAM 1: Mon Jan 12 at 1:30 pm (Class afterword)</p> <p>PP131 Questions 2-106(even)</p> <p>PP172 2-60; 72-100 (even)</p> <p>PP250 1-99(odd)</p> <p>DRILLS: at 3:45 pm</p>

		<p>Mass/Volume Percent (m/v)</p> <ul style="list-style-type: none"> • Molarity 	
	M-TH Jan 12-15	<p>Laboratory Work and Review Sessions</p> <ul style="list-style-type: none"> • Lab 3 Atomic Structures • Lab D-2 Compounds and Their Formulas • Moles and Chemical Formulas • Handout #1, Nomenclature • Lab 5 Chemical Reactions and Equations 	PP 28-39 PP D25-34
THIRD WEEK			
(Monday, JAN 19: MLK Day, No Lecture/Conference/Lab)			
3	T-F Jan 19-22	<p>Chapter 8 Acids and Bases Acid Base Chemistry: Nomenclature and Reaction Stoichiometry A-B Strengths and the pH Scale</p> <p>Chapter 2 Matter and Energy (2.1, 2.2, 2.4-2.7) States of Matter & the Changes they Undergo Energy and Nutrition</p> <p>Chapter 5 Energy in Chemical Reactions (5.8)</p> <p>Chapter 6 Gases The Behavior of Gases and the Laws that Govern them: Boyle's, Charles', Lussac's, Avogadro's and Dalton's; Gas Stoichiometry</p>	<p style="text-align: center;"><u>WEEKLY EVENTS</u></p> <p>EXAM 2: Tues, Jan 20 at 1:30 pm (Class afterword)</p> <p>PP291 Questions 2-80 (even)</p> <p>PP50 Questions 1-10</p> <p>P202 Questions 61-70</p> <p>PP220 Questions 5-79 (odd)</p> <p>DRILLS: at 3:45 pm</p>
	T-TH Jan 20-22	<p>Laboratory Work and Review Sessions</p> <ul style="list-style-type: none"> • Handout #2, Balancing Chemical Reactions • Lab 10 Solutions: Sections A, B, and C • Lab 13 Acid, Base and pH • Titration of Vinegar using a standardized Base • Handout #3 Prep and Standardization of NaOH 	
FOURTH WEEK			
4	M-F. Jan 27-31	<p>Part I Introduction to organic Chemistry: Formulas of simple hydrocarbons along with the functional groups that constitute the vast array of organic molecules found in Chapters 10, 11, 12 and 14</p> <p>Part II Simple organic Reactions that are in Chapters 10-12 and 14:</p> <ol style="list-style-type: none"> 1. Combustion 2. Addition: (i)Hydrogenation , Halogenation Hydration 3. Reactions of Alcohols and Thiols <ul style="list-style-type: none"> • (i). Dehydration • (ii). Redox 4. Reactions of -CHO and -COOH <ul style="list-style-type: none"> • (i). Ionization • (ii). Neutralization 5. Other Reactions <ul style="list-style-type: none"> • (i). Esterification • (ii). Acid/Base Hydrolysis • (iii). Saponification 	<p style="text-align: center;"><u>WEEKLY EVENTS</u></p> <p>EXAM 3: Mon Jan 27 at 1:30 pm (Class afterword)</p> <p>PP 362 9-15, 41-51 PP 389 1-50 (even) PP416 1-70 (even) PP 485 5-68 (even)</p> <p>Section 10.4 Section 11.3 Section 12.3</p> <p>Section 12.5</p> <p>Sections 14.2-3</p> <p>DRILLS: at 3:45 pm</p>

	M-TH Jan 27-30	<u>Laboratory Work and Review Sessions</u> <ul style="list-style-type: none"> • Lab 7 caloric values of food • Exothermic and Endothermic Reactions • Lab 8 Video on Gas Laws • Lab D-3 Properties and Structures of Alkanes • Lab 14 Alcohols, Aldehydes, Ketones: Sections A, B, C.2, C.3 and D 	<ul style="list-style-type: none"> • Bring Food wrapper with Caloric Values • Answer Post Lab 8 Questions : 5-7, 7, 11, 12, and Generate a Report • Answer Post Lab 14 Questions3 #3 (PP 196-198) and Generate a Report
FIFTH WEEK			
5	M-F Feb 2-6	Chapter 13 Carbohydrates Chapter 15 Lipids Chapter 16 Aminoacids, Proteins and Enzymes Chapter 17 Nucleic Acids and Protein Synthesis	<p style="text-align: center;"><u>WEEKLY EVENTS</u></p> <p>EXAM 4: Mon, Feb 3 at 1:30 pm (Class afterword)</p> <p>PP453 1-10 Activities for other Chapters TBA</p> <p>DRILLS: at 3:45 pm</p>
	M-TH Feb 2-5	<u>Laboratory Work and Review Sessions</u> <ul style="list-style-type: none"> • Lab 15 Carboxylic Acids and Esters, A.1-6, and B.1-2 • Lab 16 Carbohydrates • Week in Review Sessions/Discussions • Checkout 	
<p><i>Final Exam: Friday, February 6, 2014</i></p> <p><i>1:30 p.m.-3:30 pm.</i></p>			

*Please note that the assigned readings and suggested exercises, on the lecture schedule of the syllabus or on the drill handouts provided to you, 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.