SYLLABUS

GENERAL CHEMISTRY II with QUALITATIVE ANALYSIS

CHM 1046C CRN 15498 WEST CAMPUS FALL SEMESTER 2016

**INSTRUCTOR:** Robert J. Borders Ph.D. OFFICE: AHS-207

**LECTURE:** Tuesday 1430 -- 1715 WC AHS Room 210

**LABORATORY:** Thursday 1430 – 1715 WC AHS Room 309

**OFFICE HOURS:** Monday & Wednesday 0845 – 1000

Monday1600 – 1700

Tuesday & Thursday 0900 – 1400

 Friday by appointment or Virtual 0900 -- 1400

 **PHONE:** My office (407) 582 - 1905 or my cell (407) 902-3346 or leave a

message with the Chemistry office (407) 582-1407

**E-MAIL:** rborders2@ valenciacollege.edu

**Welcome to my class!** I would like to share with you my enthusiasm for chemistry and anticipate that you are excited to be learning more about it. It is called the central science. You acquire many benefits from its advances every day through the use medicines, plastics, cosmetics, energy sources, DNA analysis and foods just to name a few. Chemistry has had a tremendous impact in shaping our civilization. The study of chemistry can enrich your life by allowing you to have a better understanding of your body, mind, environment, and the universe. Please feel free to visit me during my office hours. You can also reach me by phone or email.

**PREREQUISITE:** CHM 1045C with a minimum grade of C

**COURSE DESCRIPTION:**

This class receives 4-semester hours of letter grade credit. It is the second part of a two-semester

sequence in General Chemistry. This course consists of two components; Class and Laboratory.

Modern Chemical theories are used to provide the background and tools necessary to understand

the fundamentals of general chemistry and their applications. Some of the topics that we will cover

include: Intermolecular forces, Modern Materials, Solutions, Chemical Kinetics, Equilibrium,

Acid-Base Equilibrium, Chemical Thermodynamics, and Electrochemistry. Emphasis is on

quantitative relationships used in dimensional analysis to solve problems. The laboratories

illustrate principles discussed in the classroom and are an integral part of the course.

**TEXTBOOK/MATERIALS:**

**Mandatory:** For Class: CHEMISTRY – A MOLECULAR APPROACH by Nivaldo J Tro Volume I1, Custom Edition for VC ISBN 13: 978-1-269-39648-6 , (or full textbook, for CHM1045C and CHM1046C, without Mastering Chemistry: 3rd Edition, ISBN 13: 978-0-321-80924-7. [or The e-book full version with Mastering Chemistry can be purchased on-line, access key included].

**Mandatory:** General Chemistry II Laboratory Manual, Chemistry Department, Valencia College, 2012, printed by Wiley. ISBN 978-1-118-30007-7 **No substitutes allowed**.

**Safety Goggles:** These are required for all laboratories. They are available for your use in the laboratory, or you may purchase your own.

**Scientific Calculator:** Bring to every class and laboratory. **\*Cell Phones** are not to be used as calculators.

**STUDY AIDS:**

Solutions to Black Exercises, Custom Edition for VCC, by Brown, LeMay, Bursten and Murphy. (OR Solutions to Red Exercises: 11th edition).

Chemistry tutors are available in the Math Lab.

CDs are on reserve in the library computer lab with tutorials for most major topics. For a complete list, go the URL http://faculty.valenciacc.edu/tmellone/includes/cyberedl.htm#Top

Chemistry Tutor CD - You can check out (take home) the Chemistry Tutor CD at the library reserve desk. You can check it out for four days. This CD has interactive questions and very short tutorials on a wide range of chemistry I and II topics.

**BLACKBOARD:**

We will use **Blackboard** for all class e-mail and testing; this is an Internet course management program for class. Here you will find class outlines, email addresses to communicate with me and other students in your class, useful links, grades, and announcements regarding changes in the class calendar, among other things.

**ATTENDANCE POLICY:**

**ATTENDANCE TO ALL LECTURES AND LABORATORIES IS MANDATORY.** Attendance will be taken every class and if you arrive late it is **your** responsibility to notify the professor **after** class. More than two absences from class will be considered excessive, and will negatively affect your grade. Missing more than 3 class periods, for any reason, will be considered sufficient reason for you to be withdrawn from the class. Students are responsible for allwork, announcements, handouts and material missed during an absence.

 **IT IS YOUR RESPONSIBILITY TO COME TO CLASS ON TIME AND PREPARED.**

Per Valencia's Policy 4-07; (Academic Progress, Course Attendance and Grades, and Withdrawals), a student who withdraws from class before the established deadline for a particular term will receive a grade of "W". A student is not permitted to withdraw after the withdrawal deadline.

**If you stop coming to class or laboratory, but do not withdraw from the course, a grade of F will be assigned at the end of the semester.** Any student who withdraws or is withdrawn from a class during a third or subsequent attempt in the same course will be assigned a grade of "F".

Students with **Bright Futures scholarship** who withdraw or are withdrawn from a class **must pay the college for the cost of the class.**

For a complete policy and procedure overview on Valencia Policy 4-07 please go to: http://valenciaccollege .edu/generalcounsel/policydetail.cfm?RecordID=75.

**IMPORTANT DEADLINES:**

 Drop / Refund Deadline 9 Sep 2016

 Withdrawal Deadline for a "W" grade 11 Nov 2016

**LECTURE**: You are expected to read each chapter **PRIOR** to the lecture. Class lectures will be conducted using POWER POINT. Most chapter concepts will be covered and discussed; although some material may not be covered explicitly. **HOWEVER;** you are responsible for all the material contained within the chapter and any additional material introduced during lecture. **Chapter power points are posted on Blackboard and should be downloaded prior to class.**

**END OF CHAPTER PROBLEMS:**

The learning experience provided by solving problems is essential to mastering the concepts and successfully completing this course. Homework assignments will be listed on Blackboard. You should work on these and on as many other end-of-the-chapter-problems that time allows you, as well as the on-line exercises of the textbook companion website. Answers will be posted to all homework problems after the due date.

**CLASS AND TAKE HOME ASSIGNMENTS:**

 Each one will be worth 10 to 20 points. Assignment points will add to quiz grades.

Students are encouraged to be an active participant in class and ask questions. Students may be asked to solve problems or explain specific subjects.

**LABORATORY:**

**LABORATORY SAFETY RULES:** The departmental safety rules, explained during the first meeting, must be followed at all times when working in the laboratory. Safety in the laboratory is our top priority. These rules will be strictly enforced at all times.

**LAB COATS ARE MANDATORY FOR ALL LABS.**

**NO SANDALS, FLIP-FLOPS OR SHORTS CAN BE WORN WHILE WORKING IN THE LABORATORY.**

**SAFETY GOGGLES MUST BE WORN DURING ALL LAB ACTIVITYS**.

“**NO SAFETY GOGGLES ON, DISMISSED FROM LAB.”**

**LABORATORY WORK:**

**All laboratories will start 15 minutes after the scheduled start time. Students who are 15 minutes late may not be allowed to participate in the laboratory and will receive a grade of zero. Ten** labs are scheduled. You must read each scheduled lab prior to the day of the lab. The experimental data must be kept among members of a lab group (2 students) and not shared with other groups. **The experimental data and post-lab questions are due at the end of each lab.**

**THERE WILL BE NO MAKEUP LABORATORIES. If you miss a lab your grade will be zero 0 for that laboratory.**

**PRE-LABORATORY ASSIGNMENT:** **A pre-lab report for each experiment is due prior to the start of each scheduled lab.** This is an individual report. It consists of reading the experimental procedure and answering selected pre-laboratory questions in your laboratory manual. **In addition** **you must write a write a procedural outline containing the key steps for the experiment, (5 points).** Read the required Technique sections and briefly summarize them. This can be written as paragraphs, or outline. Each pre-lab assignment is worth 25 total points.Pre-laboratory Assignment **must be** in the labeled tray within the first 5 minutes of the start of the lab periods. **Reports handed in after the first 5 minutes of the lab period will lose 5 points for being late. Pre-lab quizzes may be given for any laboratory. Usually 5 to 10 additional points.**

**NOTE:** This report is a separate report and will be recorded as a separate grade.

When handing in anything that has more than one page, staple them together. Staplers are available in the lab. You will lose points (2), if not stapled (folding corners or using paperclips is not acceptable).

**LABORATORY REPORT:** This consists of filling out the Report Data Sheet for the experiment and answering the post laboratory questions. The post laboratory questions must be stapled to the **back** of the Laboratory Reports which are due at the end of each laboratory (25 points), unless otherwise stated. **Only two names are allowed on the report without permission of the instructor**. **Your names, class and date must be clearly written**. **No** name, **No** Grade. Make sure you place it in the report tray prior to leaving the laboratory. **NOTE:** This report grade will be recorded for each of the listed students.

**EVALUATION:**

Exams: There are five **chapter exams** scheduled and one **final comprehensive exam.**  Chapter exams are worth 100 points. A final comprehensive exam covering chapters 11-20 and is worth 200 points. It will consist of 100 multiple choice questions. **IF YOU MISS THE FINAL EXAM YOUR GRADE WILL BE AN “F”.**

See the Schedule for approximate dates. These will usually be a combination of multiple choices, true/false. **THERE WILL BE NO MAKE-UP EXAMS.**

Quizzes: Ten (10) quizzes with be given. Quizzes are worth 20 points each.

**MAKEUP POLICY**:

**NO MAKEUP LABS, QUIZZES, EXAMS OR ASSIGNMENTS WILL BE GIVEN.** If you are absent from a quiz, test, pre-lab, or lab, or do not submit an assignment within the time frame, this will constitute a grade of zero.

The lowest quiz, test, and laboratory report grade will be dropped.

**HOMEWORK:** The learning experience provided by solving problems is essential to mastering chemical concepts and successfully completing this course. End of chapter problems will be assigned as homework. You should work on these and on as many other end-of-the-chapter-problems that time allows, as well as the on-line exercises of the textbook companion website. Homework will be collected and graded. **HOMEWORK** **WILL BE PART OF YOUR FINAL GRADE**. **LATE HOMEWORK WILL BE ACCEPTED AT THE NEXT SCHEDULED CLASS ONLY, BUT WILL LOSE 10 POINTS and no Bonus points will be given.**

You must develop regular study habits to pass chemistry. Test and quiz problems will be very much like homework problems. Studying together with a classmate is an extremely effective method of learning the material.

Each student’s grade in the class will be determined as follows.

**GRADE DISTRIBUTION:**  “**Tentative**”

**Activity Points % of Grade T Points Grading Scale**

Exams (5 x 100) 400 20 80 A 247 - 222

Quizzes (10 x 20 plus unscheduled) 180 15 27 B 221 - 198

Homework (10 x 20) 200 5 10 C 197 - 173

Pre-Lab Reports (10 x 25) 250 10 25 D 172 - 148

Laboratory Reports (10 x 25) 225 20 45 F 147 or less

Final Exam 200 30 60

 **TOTAL 1455** **100%** **247**

Final grades are determined using the above scale, based on the varying percentage of points earned from each category of the estimated possible 1455 points.

**YOU NEED TO KEEP UP WITH ALL YOUR ASSIGNMENTS!**

**LAST MINUTE CRAMMING DOES NOT WORK IN CHEMISTRY**

**ACADEMIC HONESTY:**

Academic dishonesty is not permitted. While I encourage students to help each other and study with each other, I consider classrooms, exams and quizzes to be an opportunity for the individual to stand out. Please do not plagiarize and claim someone else's work as your own (do not copy during quizzes or exams). Violation of the VCC policy on cheating can result in failure on the assignment, the course, or your active student status.

**IT IS CHEATING TO SHOW SOMEONE YOUR TEST, QUIZ, HOMEWORK OR LAB WORK SO THAT THEY MAY COPY THE WORK INSTEAD OF DOING IT THEMSELVES. CHEATING WILL RESULT IN A GRADE OF ZERO FOR ALL PARTIES INVOLVED.**

**REQUESTS FOR ACCOMMODATIONS:** Students with disabilities who qualify for academic accommodation must provide a letter from the Office for Students with Disabilities (OSD: West Campus, SSB, 103, 403-582-1523). Please discuss your specific needs with me as soon as possible.

**CLASSROOM CONDUCT:** **DISRUPTIVE** behavior detracts from the learning experience. It is discourteous to your fellow classmates. EVERONE has the basic right to learn and succeed. PLEASE respect others as you would like them to respect you. Included (but not inclusive): (1) Do not be disruptive by being tardy, leaving and returning to class prior to dismissal; (2) Do not conduct side-discussions during class: (3) State or imply acts or threats of violence against any individual; (4) Use of indecent language or gestures; (5) use any music device or telecommunications devices.

**AS A COURTESY AND TO AVOID CLASS DISRUPTIONS, PLEASE ENSURE ALL CELL PHONES, OR OTHER ELECTRONIC DEVICES ARE TURNED OFF**

\*\*Students using cell phones, sending or receiving txt messages or using other electronic devices (except Digital Textbook) in class will be asked to leave the class room or laboratory for the remainder of the class.**\*\***

**THE KEY TO PASSING AND ENJOYING CHEMISTRY IS TO DO IT EVERY DAY. ALLOCATE AN HOUR A DAY TO DO CHEMISTRY, OUTSIDE OF SCHEDULED SCHOOL TIME.**

**MINIMUM RECOMMENDED STUDY REQUIREMENTS:** This course is a CUMULATIVE learning experience, therefore, it is important that you:

 **1.**  Dedicate a minimum of eight plus hours of study to this course per week.

2. Preview material to be covered in class by reading ahead in the book.

 3. Come to class prepared and take a good set of notes on what is covered in class.

 4. Be prepared to be an active participant in class discussions and ask questions. Immediately after

 class, review lecture notes, assigned reading, and work suggested chapter questions and

 problems. Stay on top of the material.

 5. You are encouraged to work suggested chapter questions and problems. Attempt every

 problem; mastery of chemistry requires practice.

6. If you are having difficulty please seek help as soon as possible. This course will be taught at

 a rapid pace and new principles rely on mastery of previous material.

7. Sometimes it is helpful to find a study partner or form a study group to meet on a regular basis.

**VALENCIA STUDENT COMPETENCIES:**

Valencia College has defined four interrelated competencies (Value, Think, Communicate, & Act) that prepare students to succeed in the world community. These competencies are outlined in the Course Catalog. In this class, through classroom lecture and discussions, group lab work, and other learning activities, you will further develop mastery of these core competencies.

**VALUE.**  Make reasoned value judgments and responsible commitments. You will recognize

 relevant information and manage your work time.

**THINK.**  Think clearly, critically, and creatively. You will analyze data and ideas, employ formulas

 and procedures, and draw and revise conclusions.

**COMMUNICATE**. Identify your own strengths and need for improvement as a communicator.

 **y**ou will exchange ideas and information with others.

**ACT**. Act purposefully, reflectively, and responsibly. You will set goals and solve problems.

**IT IS YOUR RESPONSIBILITY TO COME TO CLASS PREPARED and ON TIME.**

**CLASS AND LABORATORY ATTENDANCE IS ESSENTIAL FOR SUCCESS!**

 \*\* CHM 1046C CRN 15498 TENTATIVE SYLLABUS \*\*

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| --- | --- | --- | --- |
| **Date** | **Lab’s** | **Study/Lecture Chapters** | **Test/Quiz** |
| 30 Aug |  | Syllabus /Chapter 11 |  |
| 1 Sep  | Intro to Lab and Lab Safety  |  | Quiz # 1 Ch 11 |
| 6 Sep  |   | Chapter 11 & 12  |  |
| 8 Sep  | Exp 1 Evap & IM attractions |  | Quiz # 2 Ch 12 |
| 13 Sep  |  | Chapter 13 Review Chapters 11-12  |  |
| 15 Sep  | Exp 2 Qual: Common Anions |  | Quiz #3 Ch 13 |
| 20 Sep  |  | Chapter 14 **TEST # 1 Chapters 11-12**   |  |
| 22 Sep  | Exp. 3 M.M. of a Solid Read:”Using LabQuest2 Data Collector With Thermal Probe” in Bb.  |  | Quiz # 4 Ch 14 |
| 27 Sep  |  | Review chapters 13 & 14  |  |
| 29 Sep | Exp 4 Factors Aff. Rxn. Rates.  |  |  |
| 4 Oct |  | Chapter 15 **Test #2 Chapters 13 & 14**  |  |
| 6 Oct |   | “ NO CLASS” | Quiz # 5 Ch 15 |
| 11 Oct |  | Chapter 16  |  |
| 13 Oct | Exp 6 Equil. Constant. Read App D & H  |  | Quiz # 6 Ch 16 |
| 18 Oct |  | Rewiew Chapters 15 and 16  |  |
| 20 Oct | Ecp. 7 Le Chatelier’s Buffers  |  |  |
| 25 Oct |  | Chapter 17 Test #3 on Chaps 15 & 16  |  |
| 27 Oct  | Exp 8 Acids, Bases and Salts |  | Quiz # 7 Ch 17 |
| 1 Nov  |  | Chapter 18 |  |
| 3 Nov | Exp. 9 Potentiometric Alys.Read “Operation of LabQuest withDrop Counter” Bb |  | Quiz # 8 Ch 18 |
| 8 Nov  |  | Review chapters 17 & 18 |  |
| 10 Nov | Exp. 10 Solubility Product Constant |  |  |
| 15 Nov  |  | Chapter 19 Test #4 on 17 & 18  |  |
| 17 Nov  | Exp 11 Thermdyn of Borax |  | Quiz # 9 Ch 19 |
| 22 Nov  |  | Chapter 20  |  |
| 24 Nov | **THANKSGIVING No lab**  |  | Quiz # 10 Ch 20 |
| 29 Nov |  | Review Chapters 19 & 20 |  |
| 1 Dec | Handout “Electrolysis”print fm Bb | **TEST #5 CHAPTERS 19 & 20** |  |
| 6 Dec |  |  |  |
| 8 Dec  | Exp. 13 Practical Exam |  |  |
| 12 Dec | **FINAL WEEK** |  |  |

\*\* Syllabus subject to change. Advance notice will be given. \*\*

NOTE: The instructor reserves the right to add, subtract or change this schedule at any time.