

SYLLABUS

CHEMISTRY 105

SPRING 2014

LECTURES: MWF 11:10AM and 2:10PM Fulmer 226

INSTRUCTOR: Dr. Michael Finnegan Fulmer 30A 335-5692 *email: via the Angel email tool*
Office Hours: 10:00AM-11:00AM MWF, 2:00-3:00PM Tu/Th.

GENERAL CHEMISTRY OFFICE: Nikki Clark Fulmer 319A 335-1516 nikki_clark@wsu.edu

LABORATORY SUPERVISOR: Ryan Rice Fulmer 313 335-6358 rwrice@wsu.edu

GRADING:	3 "midterm" exams	300	GRADE RANGES: (minimum points to achieve)		
	11 tutorial quizzes (best 8)	160	900 points	A	740 points C+
	Homework problems	90	870 points	A-	700 points C
	10 laboratory experiments/worksheets	250	840 points	B+	670 points C-
	Final Exam	<u>200</u>	800 points	B	640 points D+
	TOTAL	1000	770 points	B-	600 points D

Less than 600 points: F

MIDTERM EXAMS: Thursday Feb 13 6:00– 7:00 pm (Chapters 1-4.7 + Lab WS #1 & Expts 1 & 5)
Thursday March 13 6:00– 7:00 pm (Chapters 4.8-7.9 + Experiments 6 & 9)
Thursday April 24 6:00– 7:00 pm (Chapters 7.10-10.4 + Experiments 8, 10, 11)
FINAL EXAM Thursday May 8 7:00pm–10:00 pm (Chapters 1-11 + all Worksheets/Experiments)

TEXT: *Chemistry: The Science in Context* by Gilbert, Kirss, Foster, and Davies, 3rd edition, WW Norton & Co (2012). ISBN: 978-0-393-93431-1 (hardcover) or 978-0-393-14962-3 (paperback). The text and access to the Smartwork homework site are required. The bookstores have new texts bundled with a Smartwork access code. Smartwork access codes can also be purchased separately at the bookstores or on the publisher's website (<http://books.wwnorton.com/books/buysmartwork>).

LAB TEXT: *Chemistry 105-106 General Chemistry Laboratory Manual* by WSU Chemistry Department, Star Publishing (2013) is required to complete the laboratory portion of this course.

LABORATORY NOTEBOOK: Duplicating with numbered pages. (Sold in Fulmer 318 the 1st and 2nd week of class.)

GOGGLES: Required by State Law. (Sold in Fulmer 318 the 1st and 2nd week of class.)

CALCULATORS: You are expected to have and to be able to use a scientific calculator. Graphing calculators are allowed but not required. The use of any stored information/programs in a programmable calculator will be considered cheating. Calculators with a full QWERTY keyboard (such as the TI-92 or Voyage 200); PDAs; palmtop, laptop and handheld computers; and cell phone/calculator combinations may not be used during quizzes and examinations. You are responsible for bringing your calculator to all tutorials, lectures, labs and exams.

ELECTRONIC COMMUNICATIONS: We will be using Angel course management system for the course website. This can be accessed via zzzsis or directly via <https://lms.wsu.edu>. All official communications for this class will be through the Angel site. You are responsible for checking this site regularly. Use your WSU network ID and password to log in. All e-mail communications to the course instructor and TAs should be via the Angel Course Mail tool. Confidential information such as scores and grades may not be transmitted via unsecured email.

LECTURES: Lectures must be attended on a regular basis. You will be expected to read the textbook AHEAD of coming to class. Lectures will supplement and clarify the information from your text rather than reiterate it. Lectures will focus on problem solving and demonstrations of chemical reactions. There will be in-lecture writing and problem assignments that will be graded and counted towards your total point score. These in-lecture assignments will be unannounced, cannot be made up, and constitute the only possible 'extra credit' points in this course. *Bring a calculator to all lectures.* You are encouraged to form collaborative study groups and to sit with your group members during lecture.

EXAMS: There will be three midterm exams and a comprehensive final. All exams will be multiple-choice. You will be responsible for bringing a calculator and a pencil to all exams. A bubble-in answer sheet will be provided. No notes or books are allowed. Exams may be given in rooms other than the regular classroom. These rooms will be announced. No make-up exams will be given. If you are unable to take a scheduled midterm exam for academic reasons beyond your control, you will be allowed to schedule the exam at an earlier time. Midterm exams missed due to illness will be excused, with the other exams plus the final pro-rated to count for more. **Evening exams take precedence over all other university activities.**

QUIZZES: There will be eleven 20-point quizzes of which the best eight will count. Quizzes are given in tutorial. Quizzes will cover lecture, homework and laboratory material. You will be allowed to prepare a single 3" × 5" card containing your HAND-WRITTEN notes for use during each of the quizzes. No other handwritten material and no printed or photocopied material may be used during the quiz, except for an approved periodic table (the table that appears on the back of your laboratory manual).

TUTORIALS: These are small classroom meetings associated with your laboratory section and led by your TA. Students who miss tutorial will **not** be allowed into the lab. Quizzes are given in tutorial most weeks (see the course schedule). Tutorials are interactive problem solving sessions driven by your questions. Bring your text, lab manual and calculator to tutorial. Pre-labs and lab reports are due at the start of tutorial. Help with pre-labs and lab reports will not be available in tutorial as they must be completed before attending tutorial. **Tutorial sessions are never canceled!** If your TA fails to arrive for a tutorial section, send one person to contact Dr. Finnegan or Ryan Rice immediately. All others must remain in the tutorial room until the TA or a substitute arrives. Students who leave tutorial under these circumstances will forfeit all points associated with that tutorial/laboratory session (lab report, lab, and quiz).

LABORATORIES: Your course section includes a lecture time and a laboratory time. This is a laboratory GER course, thus the laboratory must be completed in order to pass the course. Thus, obtaining a score of zero for 3 or more experiments will result in an F for the course.

Make-up labs: Labs missed for reasons beyond your control, may be made up, on a space available basis, in the same week that the lab is missed. You will be allowed to make up a maximum of two labs per semester in this manner. Permission for a make-up lab must be obtained, in writing, from the Chemistry Office, Fulmer 319A. The permission slip will be collected and signed by the make-up TA. **We cannot guarantee that make-up space will be available.** If you know in advance that you will miss a lab, visit Fulmer 319A as soon as possible in order to maximize the chance that make-up space will be available. **If make-up space is not available:** Bring your completed pre-laboratory assignment to Dr. Finnegan's office (Fulmer 30A) to be supplied with make-up data for the scheduled experiment. Do this as soon as you can! Reports based on make-up data are due at the normal time (in tutorial one week after you should have attended lab) and will be worth no more than ½ credit.

Pre-laboratory assignments: Pre-laboratory assignments are due at the start of the tutorial. Students who fail to submit a complete pre-lab assignment at this time will be assessed a late penalty on the full report and be required to complete the pre-lab assignment before they are admitted to lab. The student will not be given extra time in the laboratory to make up for laboratory time spent completing the pre-lab.

Laboratory procedure: Students are to perform the experiments individually unless the laboratory manual specifically requires partners for the experiment being performed. Each student is expected to record all data and observations for each experiment directly into their own laboratory notebook. Data may not be recorded on loose, 'scratch' paper then transferred to the notebook. Submission of identical data by two or more students who are not assigned to be laboratory partners will be considered cheating. Appropriate penalties will be applied to all parties. Some experiments will require you to transfer data from your notebook into a laboratory computer before you leave lab. This data must remain in the notebook! You are required to get your TA's signature on your data/observations at the end of the experiment. You will then submit the original copy of the data to your TA before you leave lab.

Laboratory dress code: For your safety, a strict dress code will be enforced in the laboratory. Failure to comply with the dress code will result in expulsion from the laboratory and a consequent score of zero for that experiment. The dress code requires that you be fully clothed from shoulder to toe. No shorts, short skirts, or shoes that do not cover the entire foot are permitted. It is recommended that you purchase and use a full-length lab coat. This will adequately cover the upper body, but your legs, ankles and feet must be covered by your 'street clothing'.

Laboratory reports: Laboratory reports will be due at the start of the tutorial in the week shown on the course schedule. Failure to submit a laboratory report for an experiment will result in zero credit for that experiment (no credit will be given for the pre-lab or data & observations sections in the absence of a full report.)

Adjustments to laboratory scores: The instructor will make every effort ensure that the grading of laboratory reports is consistent and fair. To this end, the instructor reserves the right to normalize the laboratory scores from the different laboratory instructors to the same average. Any such adjustment will be made at the end of the semester after all scores have been submitted. TA performance will be assessed throughout the semester with the goal of eliminating any necessity for these adjustments. Students are encouraged to bring any concerns about the equity of the grading process to the attention of the course instructor.

LABORATORY COAT: Optional but recommended. A strict dress code is enforced in the laboratories. NO SHORTS, NO SHORT SKIRTS, NO SANDALS, NO BARE MIDRIFTS. (See laboratory dress code.)

HOMEWORK: There will be weekly homework assignments administered through the Smartwork web site: <http://smartwork.wwnorton.com>. You will need a registration code and an enrollment code to access the course homework. Smartwork registration codes are bundled with new copies of the textbook in the bookstores. You may also purchase a Smartwork registration code on the Norton website (<http://books.wwnorton.com/books/buysmartwork>) or at the bookstores. Please follow the instructions and use the access code to register for the system. The enrollment code for this course is WSUChemistry.

When you create an account in Smartwork, you will be asked for a student ID number. Make certain that your eight-digit WSU student ID is entered correctly in that space. Failure to enter the correct student ID will make it impossible to transfer your homework scores and you will receive no credit for the homework sets you complete.

A new homework assignment will be made available each week (no later than 11:00AM each Monday). Each assignment must be completed by 5:00PM the following Monday. The due date/time for each assignment will be listed with the assignment on the homework site. Each homework set will be pro-rated to have a value of 8 course points. Thus there will be 120 homework points available this semester. A maximum of 90 points from homework will count toward the final grade. Quiz and exam questions will be modeled on the homework, so it will be to your advantage to continue to complete the homework even after you have secured your 90 points.

CLASS POLICY ON LATE (OR EARLY) ASSIGNMENTS:

Laboratory reports: Late laboratory reports will be penalized by the loss of 20% of the total points per day (or portion thereof) that they are late. *Reports submitted after the start of tutorial are a day late!* This penalty is applied after the normal grading of the report. Late penalties are applied to the entire experiment, not just the portion of the report that is late. Late penalties assessed for different parts of the report are cumulative. Reports submitted more than one week late will receive zero points. No reports will be accepted after 5:00 pm on the last day of classes (Friday, May 2nd, 2014) even if they are not yet one week late.

Homework assignments: Late homework assignments will not be accepted for any reason.

Early submission: If you know that you will not be present at the time a laboratory report is due, they may be submitted early without penalty. Homework assignments may be completed on the Smartwork system as soon as the homework assignment is posted.

Method of submission: It is best to personally deliver late or early submissions to the instructor or TA. Note that, outside of class/laboratory times and posted office hours, we make no pledge to be present or available for this purpose. If you are submitting work at other than the specified time, it is your responsibility to find us. Material may be submitted to Fulmer 319A during normal business hours (8:00AM-5:00PM M-F). Assignments delivered in any other way (slid under the instructor's office door, for example) will be considered to have been submitted at the time they are found, if they are found.

ACADEMIC INTEGRITY: Cheating or plagiarism in any form will not be tolerated. Cheating includes, but is not limited to: copying work or allowing your work to be copied; use of unauthorized material at quizzes and exams, any communication between students during a quiz or exam, and actively looking at another student's paper during a quiz or exam. Students repeating the course must rework and rewrite all assignments. Plagiarism includes resubmitting previously graded homework or lab reports from a previous semester, even if they were your own work. Plagiarism also includes using laboratory data from another person or a previous semester. Obtaining information about quizzes taken in other sections is considered cheating. Use of any electronic device other than an approved calculator during a quiz or examination is cheating. All incidences of cheating will be reported to the Office of Student Affairs. The first incidence of cheating will result in a score of zero for that assignment, quiz or exam. A second incident of cheating will result in an F for the course and possible dismissal from the University.

ACCOMMODATIONS: Reasonable accommodations are available for students who have a documented disability. If you need accommodations to fully participate in this class, please visit the Access Center. All accommodations **MUST** be approved through the Access Center (Washington Bldg, Room 217). Please stop by or call 509-335-3417 to make an appointment with an Access Advisor. Further information is available at <http://accesscenter.wsu.edu>

Accommodations are available for students for whom examinations fall on days objectionable due to religious beliefs. Requests for such accommodation must be presented, in writing, to the course instructor at least one week prior to the examination.

SCHEDULE
CHEMISTRY 105
SPRING 2013

	Date	Chapter	Topic	Lab Expt / Topic	Lab report due	Quiz/ Exam	
1	Jan 13–17	1, 2.1-2.3	Matter, problem solving, atoms, isotopes, atomic mass, bonds.	Tutorial only.			
2*	Jan 21–24	2.4-2.7 3.1-3.4	Chemical formulae & nomenclature, the mole, molar mass, chemical equations.	Worksheet 1: <i>Inorganic Nomenclature</i> .	Worksheet 1	Quiz 1	
3	Jan 27–31	3.5-3.9 4.1-4.2	Stoichiometry, empirical formula, limiting reactants, percent yield, concentration units.	Experiment #3 <i>Acids and Bases</i>		Quiz 2	
4	Feb 3–7	4.3-4.9	Acid-base reactions, precipitation reactions, net ionic equations, redox reactions.	Experiment #11: <i>Limiting Reactant</i>	Experiment 3	Quiz 3	
5	Feb 10–14	5.1-5.4	Redox reactions, oxidation numbers, thermodynamics, enthalpy, specific heat.	Tutorial plus Exam 1 practice	Experiment 11	Exam 1	
6*	Feb 18–21	5.5-5.8	Thermochemistry, calorimetry, ΔH_f , Hess's Law.	Experiment #4 <i>Molar mass of an known acid</i>		Quiz 4	
7	Feb 23–28	6.1-6.9	Gasses: properties, stoichiometry, kinetic molecular theory, partial pressure.	Experiment #5 <i>Molar mass of an unknown acid</i>	Experiment 4	Quiz 5	
8	Mar 3–Mar 7	7.1-7.9	The quantum mechanical atom, orbitals, electron configurations, valence electrons.	Experiment #6 <i>Enthalpy of formation of ammonium chloride</i>	Experiment 5	Quiz 6	
9	Mar 10–14	7.10-7.12, 8.1, 8.3,8.8	Periodic trends, magnetic properties, covalent bonds, polar bonds.	Tutorial plus Exam 2 practice	Experiment 6	Exam 2	
	Mar 17– 21	SPRING BREAK					
10	Mar 24–28	8.2, 8.5-8.7	Lewis structures, resonance, formal charge	Experiment #7 <i>The Density of Air</i>		Quiz 7	
11	Mar 31–Apr 4	9.1-9.5	VSEPR theory, molecular shape and polarity, valence bond theory.	Experiment #10 <i>Analysis of bleach by Iodometry</i>	Experiment 7	Quiz 8	
12	Apr 7–11	9.6-9.7 10.1-10.4	Chirality, molecular orbital theory, intermolecular forces, physical properties	Experiment #8 <i>The shapes of molecules and Ions</i>	Experiment 10	Quiz 9	
13	Apr 14–18	10.5-10.6, 11.1-11.2	Phase diagrams, phase changes, the solution process, vapor pressure	Experiment #9 <i>Preparation of an Iron Oxalate Complex</i>	Experiment 8	Quiz 10	
14	Apr 21–25	11.3-11.5	Colligative properties	Observe results for Experiment #9	Experiment 9	Exam 3	
15	Apr 28–May 2		Catch-up and review.	Tutorial only		Quiz 11 (make-up quiz)	
	May 8 (Thursday)		FINAL EXAM 7:00 PM - 10:00 PM				

*Monday Holiday: No lecture on January 20th or February 17th