

Chem 101 Spring 2015 Lab Syllabus

Professor: Dr. Juliet Hahn
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class time: CHEM 101L lab section **4755 T 12:45 to 3:35 pm (LSF 304/MSB 318)**
section **4756 W 1:30 to 4:20pm (LSF 304/MSB 318)**
section **5163 R* 12:45 to 3:30 pm (LSF 304/MSB 318)**
(R = Thursday)

The class will meet in **LSF L304** for a prelab lecture and then move into the lab in **MSB 318**. (With no documentation & no excuse, I always allow students to attend any of my sections of the lab. Chemicals are set up for a week at a time and after that week's chemical set up is over, you will not be able to make up a lab.)

office hours: **3:35 to 5:00 pm T,R***; **4:20 to 5:00 pm W**, **9:45 to 9:55 am T,R**; **11:10 to 11:30 am T,R** & other times by appointment. (Please email me to make an appointment. If you need me, I will always find the time to meet with you.) I will also usually be available most days before and after my lecture & lab in LSF 301 or LSF 304 or MSB 318. I am also almost always in my office during normal business hours of 9 am to 4 or 5 pm M through Friday except at lunchtime. I have a log sheet on my door so that you can tell if I have left for the day. If I am somewhere other than in my office I always leave a note where I can be found and you may always follow me. *** If there is a seminar or faculty meeting (activity hour), I may temporarily move the office hour for that week to a different time.**

Any last minute updates will be posted online at <http://JulietHahn.com> (click on the blue hyperlink "General Chemistry Lecture & Lab Information" line on the website to get to the General Chemistry items) I may also email you last minute updates to your official Francis Marion email address. You will also find excel spreadsheets (which will help you plot your data – just input your data to the spreadsheet) and other useful information on this website.

For the Lab you will need: **Textbook**, Francis Marion University **General Chemistry 101 Laboratory Manual** (latest Revision edited by T.W. Ragsdale) and **safety goggles** at McNair Science 307 **scientific calculator:** To perform calculations in this course, you will need an inexpensive "scientific calculator". It does not need to be elaborate but should be able to express numbers in scientific notation (e.g. 6.02×10^{23}) and must have log (and ln) functions. You can buy such a calculator for around \$10.00 at the local discount store. You should bring your calculator to each lab.

I am also teaching 2 lecture sections associated with this lab. **CHEM 101 Lecture section 5162 T,R 8:30 to 9:45 am** and **section 4752 T,R 9:55 – 11:10 am** both held in LSF L301.

Chemistry 101 is a 4 credit class. Your lecture grade makes up 75% of the class grade and **your lab grade is counted as 25% of the CHEM 101 class grade.**

Grading: Lab Grading will be based on the following.

12 labs (will be graded as 10 pts per lab report) lab reports 75 %

(The first lab has a Safety Quiz which counts as one lab report.)

(You may drop either the lowest lab report grade or one (and only one) zero for missing a lab report without a valid documented excuse.)

lab final exam 25%

The lab final exam will be given during the semester as 3 Mini-Final Exams of 15 to 20 minutes each of a couple of questions (fill in the blank or word problem type questions) after the first 15 minutes of the prelab time. The Lab Mini-Final will be questions almost directly out of the lab report forms so that if you knew what you were doing when you did your lab report forms then you should do well on these. **All of the lab Mini-Final exam grades together will add up to the lab Final Exam grade.** The Lab Mini-Final Exam will cover the material after the completion of the lab. The LabMini- Final Exam is **not** a “prelab” type exam. If you miss a lab “Mini-Final” during the semester with no excuse, you will earn a zero on the missed mini-final. You may however take the lab Mini-Final in **any of my sections of the lab** without any documentation or excuse. If you have documentation for missing a lab mini-final acceptable to me, I will average your other mini-finals to provide a grade for the missed mini-final with excuse. (acceptable excuse: doctor’s note, death in immediate family with proof, working on behalf of university – such as an official part of the university basketball team) You do not get to drop any of your lab Mini-Final Grades and you do not get to drop a zero for a missed lab Mini-Final without a documented excuse. (not acceptable excuses: personal problems, going away for the weekend, intramural sports) **(I do not give any points for the Pre-Lab online quizzes on the Lab Blackboard website.)** (I prefer that you take the Mini in your own section **unless it is an emergency.** If a lot of students decide to take the Mini before Spring Break on Wednesday, I may run out of exams & I may refuse to let you take the Mini on Wednesday if you are from the Thursday section. Email me ahead of time to ensure that I have an exam for you in the section.)

Lab Report Grade will consist of **3 points (out of 10 pts for the entire lab report grade, 30%)** for attendance at the beginning of lab by my signature on your lab report form, and your signing out of the lab at the end of the lab (with time of sign out on attendance sheet). **You are getting points for showing up and doing the lab.**

technique points: Up to a maximum of **3 pts (from 10 pt lab report grade, 30%)** may be removed from your lab report grade for technique. Primarily this is anything which will endanger you or your colleagues working in the lab. **(-1 point, 10%)** for each incidence of not having your safety glasses on while anyone in the lab is doing any kind of chemical experiment **(Up to -3 points, 30%)** for a single incidence of you not following Dr. Hahn’s specific directions such as “Do not go near that open flame with that liter bottle of ether!!!!” Let’s say you go to the open flame with the open liter bottle of ether and set yourself and 2 of your neighboring colleagues on fire. You will have lost 3 points **and** may be scarred for life.

NOTE: By department policy, if you do not complete (or do not turn in any work) for **3** of the 12 labs this semester, you will **earn an F** on the entire class.

1. You will receive the lab report forms at your weekly lab prelab meeting. Reports can be turned in only for experiments actually performed by the student.

This means that if you turn in a lab report and the report form does not have my signature on it, and you did not sign out at the end of lab, it is possible that you will only lose **3 points (30%)** of a **10 point lab report** if I know

that you were actually in lab and forgot to sign out and forgot to get my signature. **At my discretion, it could also mean that I opt not to accept your lab report at all because I know that you were not actually in the lab for which you turned in a lab report.**

2. **Reports are due at the next lab class after the completion of the lab (during the prelab lecture in the first 15 minutes of the prelab lecture period)** and points will be deducted for those turned in late at the rate of 20 % per business day. Reports turned in after 5 business days after the due date will receive a grade of 3/10 (3 pts for being in lab and signing in and signing out). For example, if the laboratory period is on Wednesday (1/28W), the report is due in the first 15 minutes of the next Wednesday prelab (2/4W). If you turn in the lab report on 2/4 W at 1:50 pm (5 minutes past deadline of 1:45 pm), the report will be worth a maximum of 8 points. **If you turn in the lab report on 2/11W at 1:50 pm (5 business days from the deadline)**, the report will be worth **zero** points. (If you have my signature & you signed out you will still get 3 of 10 points for having been in lab and having done the experiment. If you don't turn in your lab report at all, you will earn zero points for that lab report form even if you signed in and have my signature on the lab report form.)

3. **You will get to drop one lab (and only one lab)**. The dropped lab can be your lowest grade lab or can be a zero for one missed lab. Labs not attended will count as zeroes. If you attended the lab and performed the experiment (as shown by signature on the lab attendance sheet & my signature on your lab report form) you will have earned a 3 of 10 for the lab. If you missed a lab and cannot show hardcopy documentation which supports a reason why you missed the lab, you will earn a zero on that lab. Valid excuses for missing a lab are: medical excuse, death in the immediate family, working on behalf of the university in an official capacity. It is always in your best interest to ask me if your excuse is valid rather than assuming that it is not.

You may also make up your lab in any of my other lab sections (T 12:45 pm, W 1:30 pm or R 12:45 pm meeting in LSF 304 for prelab) with no documentation. If you need to make up a lab, please note the lab schedule. The chemicals and setup for each week's lab will only be set up from Tuesday until Friday. If you miss a Thursday lab, you will not be able to make up that lab the following Tuesday. You can only make up the lab the Tuesday or Wednesday before the Thursday lab.

If you are unable to make up the lab in one of my other lab sections and must make up the lab in a lab taught by **another lab professor**, you **will need to provide hard copy documentation of the reason for your absence** to make up a lab. It is not easy to get the permission of both myself and the other person in time for you to be able to make up a lab in the same week. If you can provide documentation of a valid reason for missing the lab, I will average and plug in (or let you make up in another professor's lab section). It may be easier to do the plugging in of the missing lab grade rather than trying to make up a missing lab unless you know about a week or two ahead of time that you will be missing a lab with valid documentation.

Example Plugging in a Missing Grade with a Valid Documented Excuse:

$(\text{your missing grade lab } 2) / (\text{your average on all labs}) = (\text{class average on lab } 2) / (\text{class average all labs})$

4. Academic dishonesty on any lab will result in a grade of zero for that report. Repeated violations will result in dismissal from the university. An example is coming to lab with data already in data tables in your notebook. Another example is having someone else's data (which does not match your own data) in your calculation work.

5. Anytime a problem is worked, the answer alone is not sufficient. You must show the work for the calculations. **Showing the calculations** does not mean just showing me all your additions and divisions. Showing calculations means: (a) you show the equation (b) then you show the equation with all of the numbers filled in and (c) then you show what your calculator spits out as the final number answer. **I do actually read your work in the calculations to grade your lab report.**

Email Dr. Hahn immediately if you miss a lab or know that you will be missing a lab. If your absence has a documented excuse acceptable to me, then I will substitute your missing grade with your average prorated for the class's average.

6. I will collect the lab Mini-Final the same day that your graded Mini-Final is returned to you. I will also collect the Lab Report Forms the week of the Mini-Final for those lab reports. The reason why I collect the lab report and Mini-Finals is because I use almost the same lab report forms from semester to semester and I don't want the graded lab report forms floating around. If you want notes to study for the Mini-Final, please write your notes on something other than the lab report forms. (If you do not return the Mini-Final, I will remove 10% from your Mini Final grade. If you do not return the Lab Report Forms at the Mini-Final covering the Lab Report, I will remove 10% from your lab report grade.)

Notes: The following should be noted concerning the laboratory period.

A. Some medical conditions make exposure to certain chemicals unwise. If you are currently under treatment by a health professional and/or you have a concern about possible exposure to chemicals in the laboratory required for this course, please discuss this matter with your physician.

B. The three-hour laboratory period will be divided into a one-hour recitation or problem-working session with the remaining two hours for performance of the assigned experiment. All experiments are expected to be done individually and independently unless otherwise specified by the instructor. However, you will find it useful to find other students to discuss your reports for different perspectives on questions, etc.

C. Video pre-labs have been prepared for most experiments. The videos are available in the Cauthen Media Center and on the lab "blackboard". Every student is required to view the prelab video before attending his or her scheduled laboratory period. Only minimal detailed laboratory instructions will be given at the laboratory period. The experimental procedure for each experiment is detailed in the laboratory manual. Please read the procedure in the lab manual before viewing the video. A picture ID card is required for using their headset. The time-length of each video is given in the *Lab Manual*. (I, Dr. Hahn, do not require you to view these videos but I think viewing the videos will save you hours of lab performance time.)

D. Students are expected to be ON TIME for the laboratory period. ON TIME means to be in your seat when it is time to start the period. **If you come to lab (meaning the beginning of the prelab recitation period) 15 minutes after the start of the lab period, you will lose 30% points. (You may also set yourself on fire because you do not know the safety instructions discussed in the prelab lecture.)** If you miss the first hour of the class period (first hour of class is: 12:30 to 1:30 pm M & F or 1:30 to 2:30 pm W) you may be banned from performing the experiment during the scheduled laboratory period that day. If you are thrown out of lab for being an hour or more late to class, that day's lab will earn a zero and you may or may not be allowed to make up the lab, depending on whether you had a valid, acceptable reason for being late or not.

E. The laboratory attendance policy requires all laboratory periods to be attended and all required reports turned in prior to the final exam for the lecture. If three or more labs are not completed or if three or more labs are not turned in, a grade of F will be assigned **FOR THE COURSE (meaning including the lecture)**.

Only one missed laboratory period may be dropped during the semester. (This would mean that you will have to miss 4 labs with no documentation (one dropped) before you earn an F in the course.)

F. The departmental policy concerning eye protection in the laboratory is as follows:

For proper eye protection ALL students enrolled in chemical laboratory courses are REQUIRED to purchase and wear **chemical splash goggles** (NOT GLASSES) which meet departmental requirements for impact and splash protection. The goggles must be worn by everyone including those who normally

wear glasses and those who wear contacts. Those students who wear contacts but do not have eyeglasses may wear contacts in the laboratory with a **label** on the goggles so indicating. These labels are available in the lab.

The ACS Committee on Professional Training specifies:

Anyone working or visiting in the lab must be wearing goggles, and consumption of food or drinks must not be permitted. A clean, uncluttered laboratory is more likely to encourage careful work. Laboratory Safety, 2012

G. All students must have on file in the department a signed statement agreeing to abide by all departmental safety regulations including clothing and to abide by the departmental eye-safety program. **The Safety Agreement Form** is a rip out page found in the last page of laboratory manual.

Computer Lab

For your convenience we have a computer lab in LSF 310. This has twelve computers with Internet access, word processing, spreadsheet, molecular modeling and drawing and graphing programs. Several times during the semester you will be required to produce graphs, etc. from computers. **Have a memory “stick” available.** You may need to provide your own paper in order to use the Departmental laser printers in L310. Do not attempt to install any software on the computers or remove any from them. A table is also available for students studying together. We also have a Tutoring Center in MSB 315, also with computers, if you need help. Consult the posted schedules. All of the “logger pro” software is located on the computers in the Chemistry floor of LSF. However you may also use the “Excel” program found in most computer’s Microsoft Office software for plotting your data.

Please note: There are multiple sections of this General Chemistry I Lab Class. **Each Lab Professor has his own syllabus. Policies and rules for one section do not apply to the policies and rules for other sections.** If you follow the rules and policies for another section of the lab in this lab class, you may lose a lot of points.

Example 1: If your friend tells you that in my lab section you get the majority of your points for the lab notebook which is graded by undergraduate teaching assistants and turn in no lab reports for all of the labs, you will get a zero on every lab. I do not collect nor grade lab notebooks. I only collect and grade lab reports. I grade every lab report myself with no assistance from undergraduate or graduate teaching assistants, staff or other faculty. Please note that there are over 90 students in my three lab sections. Each of 12 week I am grading 90 x about 5 pages of bad handwriting lab report forms. By the end of the semester, I have read and graded 5,400 pages of bad handwriting lab report forms. **Example 2:** Your friends (or even a tutor) tell you that there is no penalty for turning in lab reports late so you just hold onto 3 of your lab report forms until the end of the semester. My syllabus states that you lose 20% for every business day that you turn in the lab report late. So when you turn in your 3 late lab reports, you only earn 3/10 on those 3 lab reports. 3/10 is 30% or failing on those 3 late lab reports. In general you drop down by about a letter grade for each zero lab report. So your total lab report grade is going to be around a maximum of 70%. If you earned about a 90% on your other lab report grades, then your final lab report grade is going to be around 63%. So your lecture grade has 63% on 75% of the 200 of 820 total lecture points. This scenario is assuming that you did perfect on your lab mini-finals. If you lose all of your lab report grades, you will have a maximum of 25% on your lab grade, an F on 25 % of your General Chemistry Lecture Grade. **Example 3:** Lets say that your friend (or even a tutor) tells you that there is a common multiple choice final exam for all of the lab sections and that the lab final exam is graded by a group of lab teachers and undergraduate teaching assistants. If you believe this and deliberately miss all of my Lab Mini-Finals, attend the final exam study session held by another professor, and only take my last Mini-Final you will make a really bad grade. You would have missed 2/3 of the Lab Mini-Final grade and would likely do very badly on the last Mini-Final which is all essay and fill in the blank. So your grade on 25% of the 200 lab points (of 800 total lecture points) will be almost nothing. If you lose all of your mini – final points, then you will have a maximum of 75% on your lab grade.

Laboratory Schedule:

The laboratory experiments Title (and number in the manual) to be completed during the semester are listed opposite the scheduled week. *Students should consult the laboratory schedule each week to be certain they are preparing for the proper experiment.*

Lab #	Date	Experiment Name	Manual Starting Page
1	1/13T to 1/16F	Math Practice, check in, safety video	21
*	1/19M	MLK Holiday, no class	
2	1/20T to 1/23F	Density	25
3	1/27 T - 1/30 F	Chemical & Physical Changes	32
4	2/3 T - 2/6F	A Series of Chemical Changes	37
5	2/10 T – 2/13 F	Formula of a Metal Oxide	41
Mini – Final Part I: (1) safety & Math Practice (2) Density (3) Chemical & Physical Changes (4) Series of Chemical Changes			
6	2/17 T - 2/20 F	Concentration: Molarity	45
7	2/24 T – 2/27 F	Conversion of a Carbonate to a Chloride	53
8	3/3 T - 3/6 F	Quantitative Measurement of Conductance	57
9	3/10 T - 3/13 F	Types of Chemical Reactions	62
Mini-Final Part II: (5) Formula Metal Oxide (6) Molarity (7) Carbonate to Chloride (8) Conductance			
*	3/16M – 3/20F	Spring Break	no class
10	3/24 T – 3/27 F	Gas Laws: Boyle's Law, Molar Mass of a Gas	67
11	3/31T – 4/3F	Group and Periodic Relationships	73
12	4/7T – 4/10F	Molecular Structure	77
13	4/14T – 4/17F	Lab Final Exam (Dr. Hahn Mini III)	
Mini-Final Part III: (9) Types of Chemical Reactions (10) Gas Laws (11) Group & Periodic Relationships (12) Molecular Structure (My section has no other Final Exam other than the 3 Mini-Finals which adds up to the Final Exam grade.)			
	4/21T-4/24F	lab professors are grading	no class

Syllabus Agreement Form, Information Sheet & PIN number selection

I have read and understand the policies stated in the syllabus for Dr. Hahn's CHEM 101 Lab class for the Spring semester of 2015. All questions have been answered to my satisfaction. By signing this sheet I agree to abide by the policies stated therein.

Your signature _____ Dr. Hahn CHEM 101 Lab Spring 15

Print your name: _____ Date submitted: _____

***** Information Sheet **circle section** [(T 12:45 pm) (W 1:30 pm) (R 12:45 pm)]

contact phone # _____ contact email address _____

major _____ year (please circle one) fresh, sophomore, junior, senior, other

if other please explain _____ last chemistry course taken (course name) _____

when (year, semester) _____ where (here, other) _____ cumulative GPA _____

grade received on last chemistry course _____

other science courses taking currently (give course name) _____

Are you doing research? (yes, no) If so with whom? _____

Why are you taking this class? _____

hobbies: _____

Feel free to tell me anything else you would like me to know about you: _____

***** PIN Selection

I _____ (sign name) give Dr. Hahn permission to

post my grades by using the PIN # _____ for the Spring 2015 semester for CHEM 101 L

(General Chemistry I Lab) I may opt out of having my grades posted (Do not use your SS# or

student ID # or FMU Pin # to ensure the security of your posted grades.) I also [(do) or (do not)] (circle one)

give Dr. Hahn permission to return my actual lab reports & exams in a self serve fashion.