

General Chemistry 101 Laboratory Syllabus

Professor: Dr. Juliet Hahn
office: Leatherman Science Facility L303 H (office hours will be held in LSF L303 H)
phone: 843-661-1483 **email:** JHahn@fmarion.edu

office hours: T 3:40 pm - 4:40 pm, R 11:20 am - 12:20 noon, F 11:30 -12:30 noon (by majority vote of both lecture sections) and by appointment (If you need me, I will always find the time to meet with you.)

Any last minute updates will be posted online at <http://JulietHahn.com>

For the Lab you will need: **Textbook**, Francis Marion University **General Chemistry 101 Laboratory Manual** (7-12 Revision edited by T.W. Ragsdale) and **safety goggles** at McNair Science 307 **Student Laboratory Notebook** with spiral binding with carbon copy rip out pages. (at Patriot Bookstore). **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. (**note** My lab sections are 3 of 15 lab sections & I, Dr. Hahn, edited the common syllabus written by Mr. Travis Ragsdale following my discussion with my 3 section of lab students.)

class time: CHEM 101L lab section 0083 T 12:45 to 3:45 pm LSF L301, section 3078 R 12:45 to 3:45 pm LSF L304, section 3488 F 12:30 to 3:30 pm in LSF L301, All labs meet in the lecture room for a prelab lecture and then move into the lab in **MSB 316**

Please **complete each lab in your own section** (even for the 3 sections which I am teaching this semester) unless you have a documented valid excuse and preferably my prior permission to do otherwise. I am also teaching 2 sections of the lecture associated with this lab. (My Lecture sections are section 1419 – T,R 8:30 to 9:45 am, section 2068 – T,R 9:55 to 11:10 am both 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**. I will submit your lab grade to your lecture instructor at the end of the semester for the lab grade to be included with the lecture grade.

Grading: Lab Grading will be based on the following.

12 labs (will be graded as if each lab is worth 10 pts per lab report)	lab report	35 %
12 labs (will be graded as if it is worth 10 pts per lab notebook) (I will sign and date your lab notebook sometime during every lab period. It is your responsibility to make sure that you obtain Dr. Hahn’s signature and that you turn in the copy of your lab notebook to Dr. Hahn before you leave the lab after the completion of your lab. If you turn in your lab notebook without Dr. Hahn’s dated signature, your lab notebook may not be accepted at Dr. Hahn’s discretion.)	lab notebook	35 %
12 labs (will be graded as if each lab quiz is worth 10 pts per lab quiz)	lab quizzes	5 %
final exam (will be graded as if the final exam is worth 100 pts) A cumulative final exam made up by Dr. Hahn will be given during the last week of classes on 11/27 T, 11/29R, and 11/30F for my T, R,F lab sections during the normal lab class time in LSF L301. (based on questions in the lab reports or something discussed in the prelab lecture or during lab)	final exam	25 %

technique points: Up to a maximum of **2 pts (from 10 pt labnotebook grade)** may be removed from your notebook grade for technique. Primarily this will be for anything which can endanger you or your colleagues working in the lab. **(1 point)** for each incidence of not having your safety glasses on while anyone in the lab is doing any kind of chemical experiment **(Up to 2 points)** for a single incidence of you not following Dr. Hahn's specific directions such as "Do not go near that open flame with that open liter beaker of ether!!!!" Let's say you go to the open flame with the open liter beaker of ether and set yourself and 2 of your neighboring colleagues on fire. You will have lost 2 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 CHEM 301 class.

1. You will receive the lab reports at your weekly lab meeting. Reports can be turned in only for experiments actually performed by the student. (I will have proof that you actually performed the experiment by your having already turned in your signed lab notebook.)

2. **Reports are due 7 days after the completion of the lab (in the first 20 minutes of the lab period)** and points will be deducted for those turned in late at the rate of 10% per day. Reports turned in after 10 days will receive a grade of zero.

Example: Tuesday Lab 9/4 density lab – **Lab completed on 9/4 T.** Turn in **lab notebook** pages for density on **9/4 at the end of class period** at 3:45 pm. **Deadline to turn in lab report for density lab is on 9/11 by 1:05 pm** in LSF 301. If you turn in density lab by 9/12 W at 1:05 pm, your 10 point lab report will be worth a maximum of 9 points. If you turn in the density lab by 9/12 W at 1:30 pm your 10 point lab report will be worth a maximum of 8 points. If you **turn in** the density lab by **9/21F at 1:05 pm** and after, your density lab report will be worth zero (**please note zero**) points. You are also always welcome to turn in anything before the deadline at any time at the "turn in box" outside the department office (in between the two doors of LSF L304, into the box that has my name on the box). I will check the "turn in box" everyday at around 1:05 pm. (These are the ones labeled – turn in box, not department mailbox)

3. No grades will be dropped. **Labs not attended or reports not turned in** will count as zeroes. If three or more zeroes are recorded, a grade of zero will be reported to the lecture instructor which will result in **failing the lecture part of the course** also. Lecture and lab are not entirely separate.

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.

5. Anytime a problem is worked, the answer alone is not sufficient, you must show the calculations.

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.*

Week of Laboratory	Experiment Number	Name	Starting Page
Aug 27 - 31	1	1. Safety Video, Rules and General Laboratory Instruction	3
		2. Math Practice	20
		3. Check-in of assigned desks	
Sept 4 - 7	2	Measurements and Significant Figures: Density	24
Sept 10 - 14	3	Chemical and Physical Changes	30
Sept 17 - 21	4	A Series of Chemical Changes	35
Sept 24 - 28	5	Formula of a Metal Oxide	39
Oct 1 - 5	6	Concentration: Molarity	43
Oct 8 - 12	7	Conversion of a Carbonate to a Chloride	50
Oct 15 - 19	8	Quantitative Measurement of Conductance	54
Oct 22 - 26	9	Types of Chemical Reactions	59
Oct 29 - Nov 2	10	Gas Laws: Boyle's Law, Molar Mass of a Gas	64
Nov 7 - 13	11	Group and Period Relationships	70
Nov 14 - 20	12	Molecular Structure	74
Nov 26 - 30		Laboratory Exam (This exam will count as 25% of the laboratory grade.)	

See Dr. Hahn immediately if you miss a lab or if you know that you will be missing a lab.

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 (LSF 301 or LSF 304) with the remaining two hours for performance of the assigned experiment (in McNair 316). 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 or in LSF L310. 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 (on page 1)*.

D. Please take the on-line quizzes on the video content. After viewing the prelaboratory video, each student must take a computer generated quiz at <http://Blackboard9.fmarion.edu> (access code = chemistry) Print the quiz and turn into me during the pre-lab lecture for your Quiz grade.* [*There may be a change to this quiz protocol (such as taking the quiz in class open book) if too many people have difficulty navigating the lab quiz

on Blackboard.]

E. 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 lecture period) 20 minutes after the start of the prelab lecture period, you will lose 2 points. (You may also set yourself on fire because you do not know the safety instructions discussed in the prelab lecture.)** It is possible that any student who misses the recitation period may be banned from performing the experiment during their scheduled laboratory period because you will have missed all of the safety warnings. If you are banned from doing an experiment because you are late, you will have to make up the entire laboratory period during the scheduled make-up period.

F. The laboratory attendance policy requires all laboratory periods to be attended and all required reports turned in prior to the laboratory final exam. If the required laboratory reports are not turned in, a grade of F will be assigned **FOR THE COURSE (meaning including the lecture part of CHEM 101)** because all the required work for the course has not been completed .

G. Before a missed laboratory can be made-up, permission to do so must be obtained from Dr. Hahn. If your excuse for missing your regular period is not acceptable to Dr. Hahn, you will not be granted permission to make-up the experiment. Even if you make up a missing lab in another lab section, if you did not have Dr. Hahn's permission to make up the lab, that report will not be accepted and will count as one of the 3 labs not completed for an F on the class. Extenuating circumstances will be considered. **If approval is not given, a zero will be assigned for the experiment.** Do not wait until the last minute to see Dr. Hahn about missed labs.

Only one missed laboratory period may be made up during the semester.

If you miss more than one laboratory due to extenuating circumstances, you must petition Dr. Williams, Chemistry Department Chair, (LSF 303C) with proof. If your reason is unacceptable, a zero will be assigned for that laboratory and no report will be accepted.

H. 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

I. 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 found in the 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.

Syllabus Agreement Form

I have read and understand the policies stated in the syllabus for Dr. Hahn's CHEM 101-L class for the Fall semester of 2012. All questions have been answered to my satisfaction. By signing this sheet I agree to abide by the policies stated therein.

Your signature _____

Print your name: _____

Date submitted: _____